The Bradshaw Lecture

ON

DARWINISM AND MEDICINE.

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BY

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Mr. President,—I trust I may with some propriety in this year of the Darwin centenary ask you to consider with me the significance of Darwin's great discovery for medical thought and practice. The subject is large and can on this occasion be dealt with only in outline. The field which I shall ask you to traverse is a well-trodden one, but I believe its fruitfulness is not yet exhausted. Darwin's work on *The Origin of Species* contained, as Helmholtz said, "an essentially new creative thought," a thought, I venture to add, which is still fertile, still seminal, still full of suggestion and guidance for all whose labours lie in the field of biology.

The relation of the science and art of medicine to the higher thought of the day must always be a matter of interest and importance. Medicine is coloured by that thought: its postulates, prepossessions, and theories are modified by it; in its degree it contributes to that thought. When we get from the facts of science to the truths of science, to emphasize a pregnant distinction, our thinking is modified, stimulated, or deflected to an important extent by the intellectual atmosphere in which we live. A notable instance in point is afforded by the Father of Medicine—Hippocrates. In the Homeric poems everything is miraculous. The storm, the sunshine, shipwreck, plague, blight, sickness, victory, defeat—everything is due to the direct interposition of supernatural powers. "Every event," as the late James Adam said, "is a theophany." The conception of natural law has not yet arisen. How different is the atmosphere of the works of Hippocrates! Here, amidst much that is crude and empirical, there is a genuine recognition that in the field of disease events follow a natural sequence, that effects are proportionate to causes, that order reigns, and that our business is to investigate that order. Between Homer and Hippocrates had intervened the great school of the Ionian physicists from Thales to Democritus; physical science had seen its dim and feeble dawn; the lineal succession was opened which was one day to include the names of Galileo and Copernicus, of Leibnitz and Newton, of Darwin and Wallace. The comparative failure of the successors of Galen to advance the art of medicine, and the barrenness of our art during the many hundred years during which their influence reigned supreme, were due in large measure to the false philosophy which lay at the root of the Galenic system, to the predominance of metaphysical theory over observation and experiment. The rapid advance of medical science in modern times has coincided with the progress of physical and biological science in general, in part because science furnishes medicine with instruments of precision and methods of research, but perhaps even more because it creates the atmosphere in which medicine can flourish and develop. The reaction of one branch of science upon another branch at the present day is both potent and prompt.

I need not inform you that the conception of evolution existed long before Darwin, and goes back to the very dawn of science. It is said to occur in the sacred books of the Vedas. It was the central thought of the philosophy of Heraclitus. It is found in the works of Aristotle, and we can trace it through a long succession of thinkers, including Bacon, Descartes, Leibnitz, Hume, Kant, Goethe, Buffon, Geoffrey St. Hilaire, Erasmus Darwin, and Lamarck. It is interesting to note that one of the most notable precursors of Darwin was a member of our own profession, Dr. James Cowles Prichard of Bristol. Writing in the year 1826, Prichard clearly recognized the existence of organic evolution. He fully apprehended that domesticated races of animals and plants have been produced by selection by man, and not by the influence of environment; he recognized the operation of natural selection, though he misinterpreted its range and importance; and, most curious of all, he recognized the difference between acquired and congenital characters, and argued for the transmissibility of the latter and the non-transmissibility of the former—a view reached independently half a century later by Weismann, and now usually associated with his name. Darwin did not discover Evolution. He discovered its leading law, and by a long series of observations, experiments, and reflections, unparalleled in the history of science, converted the brilliant guesses of earlier inquirers into an assured truth and an established principle.

We claim for Darwin (Alfred Russel Wallace says) that he is the Newton of natural history, and that, just as surely as that the discovery and demonstration by Newton of the law of gravitation established order in place of chaos and laid a sure foundation for all future study of the starry heavens, so surely has Darwin, by his discovery of the law of Natural Selection and his demonstration of the great principle of the preservation of useful variations in the struggle for life, not only thrown a flood of light on the process of development of the whole organic world, but also established a firm foundation for all future study of Nature.

The conception that the organic world is the scene of an incessant struggle, of a keen vital competition, in which the fittest survive—that is, the fittest for their environment in the capacity to obtain food, resist their enemies, and propagate their kind—while the unfit perish, has been recognized as the fundamental law of life, and the demonstration of this principle we owe to Darwin and to Wallace. As Weismann says, this principle "has become the basis of the science of life"; it "has conquered the world," and has become so inwrought in the texture of our thought that it is now practically impossible to think of any biological problem except in terms of evolution. That any of the fundamental features of the Darwinian doctrine have been subverted by fifty years of inquiry and controversy is not, to my mind, a tenable proposition. It is true that some of the subordinate features of that doctrine remain open questions: how far, for example, use and disuse have operated in producing organic changes; what weight is to be assigned to the influence of the environment—a point upon which careful readers of the works of Darwin will see that his mind wavered from time to time—what is the precise significance and area of operation of sexual selection; whether acquired characters are inherited or not; how far the Mutationism of De Vries and others operates instead of slow and almost imperceptible change. On these points finality has not yet been attained, but their solution—whatever it may be—will not invalidate the Darwinian doctrine. The general tendency of inquiry since Darwin's time has been, upon the whole, to strengthen the claim of Natural Selection to be regarded as the great law of organic life, to show how wide its range, how subtle its operations, and to minimize the importance of other factors. To take an example—at first sight nothing can be more obvious than to attribute to the effect of disuse the loss of sight by fish, crabs, and rats inhabiting the dark caves of Kentucky and Carniola. But another view is at least tenable. When, owing to the absence of light, the faculty of sight ceased to be of utility to these creatures, natural selection, of which the function is to keep every organ which is of use to any creature up to the mark, ceased to operate, and it is a fundamental law that any organ withdrawn from the conservative action of natural selection tends to degenerate. The controversy especially associated with the name of Weismann, whether acquired characters are inherited or not, is one of vast and far-reaching importance for practitioners of medicine. Weismann, as you are aware, holds that in all organisms there are two kinds of plasm, the somatic and the germinal; that the permanent germ plasm passes unchanged through a series of generations and is not affected, or but little affected, by environmental influences, which affect the somatic plasm; that modifications produced upon the somatic plasm by the environment and by use or disuse are practically limited to the individual and not transmitted to the offspring, and that hence no characters except those predetermined in the germ are available for evolution. This question is too

large to be discussed at any length on this occasion. Medical opinion has been to a large extent opposed to the views of Weismann, but it must be admitted that he has succeeded in throwing great doubt on the transmissibility of acquired characters, a doctrine which Darwin assumed as too obvious to require demonstration. Most of the supposed cases of such transmission are apparent rather than real. Syphilis seems a crucial case in point, hereditary syphilis being one of the most familiar of phenomena. But it is now practically certain that this is not a case of inheritance at all, in the strict sense of the term, the true explanation of the facts being an antenatal infection of the ovum, usually from the maternal side. Whether tuberculosis is ever directly conveyed from parent to child is still doubtful, but if such transmission were proved, the most probable explanation would be the direct inoculation of the embryo and not inheritance. To disprove Weismann's doctrine, we should require to show that mutilations, or the results of training, exercise, or education, or acquired diseases, reappeared in the offspring as the result of heredity. This has not been hitherto conclusively shown. The problem is one which has great interest for us, and medical observers might contribute to its solution. May I suggest a case in point, where evidence from the side of medicine might be available? In a certain proportion of cases neurasthenia is brought on by overstudy, anxiety, overwork, want of sleep, or excess of some kind, in persons where no congenital tendency to nervous disease can be suspected. Is such neurasthenia transmitted either as neurasthenia or some allied condition? The question is worthy of attention, and an answer ought to be possible.

Darwin as a scientific worker presents us with a model for all time, and worthy of admiration and imitation. "My success as a man of science, whatever this may have amounted to," he tells us, "has been determined by complex and diversified mental qualities and conditions. Of these the most important have been a love of science, unbounded patience in long reflecting over any subject, industry in observing and collecting facts, and a fair share of invention and common sense." In another place he says, "Whatever I have done in science has solely been by long pondering, patience, and industry." This is altogether too modest an estimate. Darwin, in point of fact, possessed in a supreme degree two faculties rarely present in perfection in the same individual—namely, immense industry and accuracy in the accumulation of facts, and a daring originality of speculation, coupled with much caution in drawing any final conclusions. He had the power of keeping any subject more or less before him for a great many years. He was an indomitable theorizer, and held that "without speculation there is no good and original observation." Again, he says, "I cannot resist forming a hypothesis upon every subject." The essential fairness and integrity of his mind is shown by the following passage:

> I had also during many years followed a golden rule, namely, that whenever a published fact, a new observation or thought came across me which was opposed to my general results, to make a memorandum of it without fail and at once, for I have found by experience that such facts and thoughts were far more apt to escape from the memory than favourable ones.

May I suggest that in much of the above there is a wholesome lesson for ourselves? That we should be diligent, patient, and thorough in the collection of facts goes without saying. That we should keep those facts for long periods, even for years, before our minds before drawing, still less publishing, our conclusions will seem a hard saying to the contributors to periodical medical literature. Perhaps, indeed, such a rule is a counsel of perfection, hardly possible to the average man. But I would ask you to note the high place assigned by Darwin to theorizing and speculation in scientific work. This may seem a dangerous doctrine, but I am convinced that it is a sound one. Medical science is to-day overweighted by the accumulation of a vast array of more or less crude and isolated facts. What we need is the illuminating generalization, the daring hypothesis, to co-ordinate facts hitherto out of relation with each other, to give perchance to science a new *organon*, to light the way to fresh fields of inquiry and discovery. It is the presence of this element of underlying theory or law which lends so much attractiveness to the work of Pasteur and Lister, of Koch and Metchnikoff, of Ehrlich and Wright. The bold hypothesis lights up the dark ways of Nature, illumines the road already traversed, sheds light on the pathway which lies ahead.

Before proceeding, after the foregoing more or less preliminary observations, to apply the principles of Darwinism to man in health and in disease, I may be permitted to remind you of the fundamental laws of growth, which must guide us in our inquiries. These laws might be stated as follows:

(*a*) The Law of the Perpetuation of Species or of the Unity of Type.
(*b*) The Law of Variation.
(*c*) The Law of Reversion.
(*d*) The Law of Atavism.
(*e*) The Law of Correlation, whereby when one organ varies other organs tend to vary also.
(*f*) The Law of Compensation or Economy, whereby increase of growth of one organ is accompanied by diminution in growth of another organ.
(*g*) The Law of Sexual Selection.

We might summarize the foregoing laws as follows: The general tendency in all living organisms is that the child shall resemble the parent in specific characters—that is, that the unity of type shall be preserved. But variation from type is always present to a greater or less degree. Darwin thought that variation was largely due to changed conditions of life. Weismann believes that sexual reproduction is the chief cause of variation in the higher animals, including man, and Wallace shares this view. Variation is accompanied by a tendency to revert to type. Hence, notable departures from type tend to die out, but to this law there are many curious exceptions—for example, the Ancon sheep and the numerous "sports" amongst plants which have given rise to permanent new varieties. Atavism is the law whereby the child sometimes resembles the grandparent or the great-grandparent more than the parent. It may be regarded as a special case of reversion. By the law of correlation we mean that principle whereby when one organ varies another organ varies, the two organs not always being related in function. Thus, white cats with blue eyes are always deaf. In certain breeds of cattle colour and susceptibility to the attacks of flies are correlated. By the law of compensation or economy we mean that principle whereby nutriment required by the overgrowth of one organ is withdrawn from another organ. It is probably in consequence of this law that the highly-specialized reactions of the nervous system developed in an advanced stage of civilization are accompanied by a decline in the birth-rate. Finally, sexual selection is undoubtedly a factor, although much uncertainty exists as to its extent of range and importance. The comparative absence of hair from the human body, especially in the female sex, has been attributed with much probability to sexual selection.

Darwinism and Normal Human Structure and Function.

Man is a member of the animal series, and it is reasonable to expect that the ordinary laws of evolution would be exemplified in his structure and in his functions. This we find to be the case. The body of man is built upon the same lines—bone for bone, muscle for muscle, artery for artery—as that of the higher apes. The comparatively few distinguishing features of the human organism have relation to three points—namely, the assumption by man of the erect posture, his acquisition of special manual dexterities, and his higher cerebration. The foot, the hand, and the fore-brain are almost the only points with regard to which the human body differs essentially from that of the quadrumana. Evolution accounts easily and adequately for these differences. Let us look at a few points less obvious than these. Why out of every score of human beings are about nineteen right-handed and one left-handed? On any creationist hypothesis this question admits of no plausible answer, but evolution suggests a highly probable explanation of the mystery. We may fairly assume that as man developed, and his functions became more specialized, it was necessary that certain parts of his structure should acquire special dexterities, and that it was by the law of economy that these dexterities were concentrated upon one limb instead of being shared by both. Hence were developed the special manipulations of the right hand. But the law of variation

above mentioned would suggest that in a matter of this kind evolution would not act with undeviating uniformity, but would admit of certain departures from type. And so we find, as we might have anticipated, that about one person in twenty is left-handed. That the special dexterities of the right hand are not innate and predetermined but the result of development is shown by the fact that the left hand contains potentially the same aptitudes as the right, and these aptitudes can be successfully developed when the right hand is lost as the result of accident or disease.

Why are the speech centres in right-handed people located on the left side of the cerebrum? The most probable explanation—first suggested, I believe, by Moxon—is that by the same law of economy it was in the interest of the developing organism that the centres presiding over the mechanisms of speech—the precise significance and mode of operation of these centres is not here in question—should be located in one, rather than in both, hemispheres. It is entirely in accord with this theory that the right side of the cerebrum should contain potential speech centres, and that these should be capable of successful and adequate development when the centres on the left side are destroyed by disease. It is also quite in line with evolutionary doctrine that the same side of the cerebrum should preside over the fine manipulations of the right hand and the complicated motor mechanisms of speech.

Why are the teeth so often crowded together in the human jaws that the removal of some of them is often a necessity in early life? Evolution affords the probable clue. There are good grounds for concluding that the human jaws are undergoing a progressive diminution in size. This diminution should be accompanied by a corresponding diminution either in the size or number of the teeth, but it is quite in accord with experience in other departments that the two processes should not proceed *pari passu*. Apparently the diminution in the size of the jaws has outrun the diminution in the size or number of the teeth, and hence the overcrowded state of the jaws which we know to be common. This explanation is adequate and probable, although it might be argued that the teeth are of less utility to man now than in earlier ages, and are hence partially removed from the operation of natural selection.

Many of those whom I address must sometimes have reflected over the curious and apparently clumsy arrangement whereby our food and drink, before entering the gullet, have to pass over the entrance to the air passages, involving a slight but appreciable risk of foreign matters finding their way into the lungs—a risk slight in health but sometimes serious in disease. The explanation suggested by evolutionary law is that the lungs have been developed from the swim-bladder of an unknown progenitor, and that an organ originally adapted for flotation has been developed as an organ of respiration. The relation of the swim-bladder to the gullet would not have involved the same risks as the relation of the gullet to the air passages. If we accept the alternative view of the origin of the lungs—namely, that they have been developed from a pair of gill clefts—the same explanation will apply.

Why is the septum between the auricles of the heart so imperfect that the passage of blood from one chamber to the other is only just obviated in the normal individual, while patency of the *foramen ovale* is one of the commonest of malformations? May it not be that we have here an example of imperfect and not yet completed development May we not expect that the present valvular arrangement for preventing the flow of blood from one auricle to another will in the course of time, under the influence of natural selection, be converted into a permanent and complete septum?

Darwinism and Rudimentary Organs.

Perhaps on no subject has evolution thrown a more welcome or a more satisfying light than upon the significance of rudimentary organs. At first sight, nothing can be more puzzling than that there should be in the human body certain organs which are functionally useless to the individual. Of such organs we have the following:

(*a*) *The panniculus carnosus*, corresponding to the muscles which move the skin in the lower animals. There are some persons who possess the power of moving at will the skin of the scalp and other parts, and I believe the music halls once possessed an artist who earned an honest livelihood by exhibitions of his power to throw plates and other articles from his head by contractions of the scalp muscles.

(*b*) *The ear muscles*, functionally inactive in most individuals but in exceptional cases capable of causing movements of the pinna, suggestive of the great importance of the movements of that organ to the lower animals.

(*c*) *The animal ear-point*, a projection upon the outer fold of the ear, present in some persons and corresponding in position to the pointed ear of many animals.

(*d*) *The rudimentary nictitating membrane or plica semilunaris.*

(*e*) *The vermiform appendix*, functionless in man, but of great importance in some of the vegetable feeders amongst the lower animals.

(*f*) *The foramen supracondyloidean.*

In addition to the above there are certain organs which seem in process of becoming rudimentary and functionless. Cutaneous hairiness is no longer of service to man, and will probably disappear under the operation of natural selection, perhaps assisted by sexual selection. The third molar or so-called wisdom teeth, are probably becoming functionless. They pierce the gums late, or in some cases not at all, and they are prone to early decay. It seems probable that the sense of smell, no longer of much practical importance to civilized man, and hence removed from the action of natural selection, is becoming rudimentary. The human toes, with the exception of the great toe, which is of service in maintaining the upright posture, being no longer organs of prehension and almost functionless, are undergoing elimination.

Rudimentary organs present no difficulty to the evolutionist. They are simply belated survivals of organs once functionally important to the race, but now on their way to extinction and disappearance. No longer under the conserving influence of natural selection, they are very prone to vary and to become the seat of disease. We see this law well exemplified in the case of the vermiform appendix, which is both highly variable in structure, and very subject to disease.

It has been suggested that the many feet of the human intestine are simply survivals from a herbivorous progenitor and of no service to a mixed feeder like man. It has even been proposed that the aid of surgery should be invoked to curtail some of its superfluous folds, which, it is argued, are not only useless, but actually a source of danger. On such a delicate subject I prefer to express no opinion. Modern surgery does not need to be stimulated to fresh fields of enterprise, least of all by a physician.

The bearing of evolution upon physiological processes opens up a wide field for reflection and speculation. We are so apt to regard these processes as fixed and final, while in reality we should regard them as fluid, variable, undergoing a process of adaptation rather than as completely adapted, imperfect, but under the influence of natural selection tending towards perfection, or in some cases, perhaps, exhibiting traces of reversion. The phenomena of digestion, for example, will appeal to our intellect and imagination very differently according as we regard them as ultimate and final facts, or as part of an evolutionary process. Man has gone through many phases in the matter of his food, and it is likely that he has still in this department a journey to go. Perhaps it might savour of irony to suggest that vegetarianism is a case of reversion to the habits of remote herbivorous ancestors, but the idea is one worth thinking over. When we are urged to lessen our consumption of butcher's meat and rely more upon nuts and salads, the question arises how far carnivorous habits are for man in the natural line of development, how far he should regard himself as essentially a mixed feeder, how far reversion to the dietetic habits of earlier ages would be a gain or a retrogression. The really illuminating thought amongst these somewhat difficult problems is that the habits of man are not predetermined and final but the result of countless generations of evolution, that they are neither wholly good nor wholly bad; that, on the one hand, they are worthy of respect as having stood the test of an immense experience, while, on the other hand, they are almost certainly destined to important modifications in the future. In this case however, as always, natural selection and adaptation to the environment will be the guiding principles to which man in his arduous march through time will be compelled to conform.

DARWINISM AND DISEASE.

What light can evolution throw upon disease, upon its origin and course, upon the response of the organism to its assault, upon immunity and proclivity, upon the principles and results of treatment? On all these heads something might be said, but the issues thus raised are too far-reaching to be adequately dealt with on the present occasion.

An inquiry into the origin of disease in the biological sense may well seem futile. How the first bacillus of tubercle or the first *plasmodium* of malaria came into being may be plausibly regarded as a problem as mysterious and as futile as the origin of matter or the origin of life, questions which Darwin always refused to discuss. "It is mere rubbish," he says in one of his letters, "thinking at present of the origin of life; one might as well think of the origin of matter." Yet the origin of life has provoked many speculations, inconclusive, but not absolutely vain and sterile. The origin of a morbific micro-organism can be only dimly surmised, but evolution may help us to understand how such organisms have acquired their potency for mischief. In some cases—for example, tuberculosis—there is reason to believe that civilization and the habits of civilized man have had much to do in conferring toxicity upon an organism comparatively innocuous under more primitive conditions of existence. Many facts of bacteriology suggest to us that organisms such as the pathogenic bacteria owe a large part of their virulence not so much, as it were, to their inherent properties, as to certain conditions of growth which are only very partially known to us. If this view be sound, it will follow as an obvious corollary that tuberculosis is to be suppressed, not by destruction of the bacillus, but simply by depriving it of the conditions necessary for its growth and development.

Evolution may throw some light upon the different effects which the same etiological factors are known to cause in different individuals. Over-indulgence in eating and drinking produces in one individual gout, in another cirrhosis of the liver, in a third renal disease, in a fourth arterio-sclerosis, and so on. How are we to account for the different responses to the same stimulus? We have to assume some congenital peculiarity in the individual, the result of factors which may stretch back to a remote past, and which have been developed in accord with evolutionary laws. A similar train of reflection is suggested by the facts of immunity, a subject upon which so much brilliant work has been done in recent years. The precise mechanism of immunity, the action of phagocytes, alexins, or other protective agencies, need not be here dwelt upon. The effects of food, temperature, fatigue, of previous diseases, of protective inoculation whereby the specific protective substances have to be formed in the body itself, and of immunization by transference of protective substances previously formed in antitoxic serum, are well known to you. What seems clear is that when full account has been taken of all secondary causes of immunity, we are thrown back upon a factor which we may vaguely describe as "constitutional," or "congenital," or as a personal peculiarity or idiosyncrasy. Why does one individual fall a ready prey to scarlatina or diphtheria while another resists repeated exposure to contagion? It is of great interest to learn that certain protective agencies are at work, which can be, to a certain extent, recognized. But it is clear that the recognition of such agencies only pushes the problem farther back, and does not finally solve it. That the predisposition to contract infective disease, or to resist infection, runs strongly in families is a matter of daily observation. Some people, as the saying is, "catch everything that is going," others escape though equally exposed to infection, and these peculiarities are found to characterize certain stocks and strains. Again, some persons on being infected quickly develop all the usual consequences of infection, while others develop them slowly, or imperfectly, or even not at all. We are familiar with the fact that the bacillus of diphtheria may be present in the fauces of healthy individuals who have been in close contact with sufferers from the disease, and no further development occur. It is probable that most of us at some time or other have received the bacillus of typhoid fever into our systems, in most cases without injurious result. I may even suggest to you that some persons have tubercle bacilli in their sputum, and seem very little, if at all, the worse for their presence. These facts might be multiplied indefinitely, and they all point in one direction, namely, that when all the secondary agencies of immunity have been unveiled—and the inquiry into them is one of extraordinary interest and importance—we shall still be left with some unexplained factor, some congenital or hereditary element which has arisen in accord with evolutionary law. We have facts which suggest to us that civilized nations are undergoing a process of gradual immunization to infective disease. When measles was first introduced into the Faroë Islands and the Fiji Islands there was an enormous mortality, amounting in some cases to one quarter of the entire population, while subsequent epidemics have shown a much lessened virulence. In accounting for such facts there seem to be two possible theories: (1) That certain inhabitants of these islands possessed a special susceptibility to the toxin of measles; or (2) that the population as a whole in some way developed an acquired immunity, of course to an incomplete extent, against the disease. The extraordinary virulence of Asiatic cholera when it first penetrated from its original home in Bengal to Europe and America is a phenomenon of the same category, while its declining severity in subsequent invasions, which is so often attributed solely to improved hygiene and greater caution regarding food and water, may really be due in part to the operation of an evolutionary law. Why are negroes so resistant to yellow fever, so susceptible to tuberculosis and small-pox? May it not be that the explanation is evolutionary, that the negro has been longer in contact with the first-mentioned disease than with the remaining two, and has hence acquired a certain degree of immunity against it? Why are Anglo-Saxons in India so much more susceptible to typhoid fever than the native inhabitants? Is it because the latter, inhabiting a country where hygienic laws are so little recognized, have developed a considerable degree of immunity? Or is it, as some affirm, that a large proportion of the native inhabitants suffer from mild attacks of typhoid fever in youth, and hence are protected during the rest of their lives? Tuberculosis is rapidly declining amongst nearly all civilized nations. Is this exclusively the result of improved hygiene, a higher range of comfort, better houses, better food, or is it in part the effect of a gradually developing immunity? Further, it may be asked, Are the two views really incompatible one with the other? How far is an acquired immunity due to improved methods of living? Again, we may ask, Is the growing sobriety of civilized nations the result of a gradually developing immunity against the injurious effects of alcohol? Are the drunkard and the intemperate undergoing a process of slow but sure elimination?

My object is not to affirm any dogmatic opinion on these important issues, but to suggest to you that in our thinking on these matters we must take a wide and philosophic view; we must recognize that in disease great secular processes, as well as more concrete causal factors, come into view. The present generation of medical workers and observers is somewhat impatient of those conceptions of "diathesis" and "temperament" which meant so much to our predecessors. We are disposed to think that these ideas lack definiteness and concreteness, that they are too vague to be of any real utility. Yet a study of evolution in its bearing upon disease may suggest to us that these terms, vague though they are, adumbrate a great truth—namely, that in proclivity to infection and response to disease nothing is so potent as what we vaguely call "constitution," "temperament," "hereditary tendency," and the like. We have been intent upon the "search for the microbe," a search which has already yielded brilliant results, and, it is needless to say, must be continued. But the response of the organism is an element at least as important as the presence of the germ. In the future it may turn out that we shall be compelled to devote less attention to the seed, more attention to the soil.

Evolution is capable of throwing a flood of light upon many of the most familiar phenomena of disease. We are apt to accept these phenomena as ultimate facts, as the effects of a toxaemia or of some other obvious causal factor. But it is possible to push the analysis a little deeper, to trace the true inwardness of morbid phenomena a little farther back. Let us ask the question,

How does it happen that in an ordinary case of hemiplegia the arm suffers more than the leg or the face; and in the arm, why is it the finer movements of the fingers and hands which suffer more than the coarser movements of the elbow and shoulder? It is easy to answer that the reason is anatomical and relates to the seat of injury and the distribution of fibres in the internal capsule, but this explanation needs itself to be explained. Here, again, we may, without extravagance, invoke evolutionary law to help us. The fine manipulations of the hand and fingers are in all probability the last to be acquired by the developing organism; they are the least stable acquisitions of nervous tissue; they are the first to suffer under the shock of disease. The nervous system, as it were, most easily forgets the lesson most recently learnt, just as the old man forgets the events of yesterday while he remembers those of fifty years ago. Aptitudes recently acquired in the genetic series are less ingrained, as it were, in the nervous system than those which go back to an earlier stage of development. Dr. Hughlings Jackson long ago pointed out the order of the dissolution of function in the brain when under the influence of alcohol. The first to go are the highest faculties—judgement, memory, taste. In the next stage speech becomes affected; it becomes thick and indistinct. Next the emotions are involved; the individual becomes hilarious, maudlin, or quarrelsome. Last of all the centres of organic life—respiration, circulation, deglutition—are affected, and death may ensue. Now, this order of events is not fortuitous. The nervous functions, under the influence of a narcotic poison, undergo dissolution in a definite order, the order of development, which corresponds to the order of complexity and specialization. It is probable that this law will be found to have a somewhat wide application in the field of disease. General Paralysis of the Insane is a good case in point, the elements of character and judgement usually suffering before those of voluntary movement.

That the laws of evolution and the influence of heredity throw light on the response of the organism to disease will, I think, be generally admitted. We are not wrong in attaching weight in prognosis to any known family tendency in connexion with any given case of disease. It helps us in forming some estimate of that subtle and intangible, but most potent, element, what we vaguely call "the resisting power of the individual." In many cases of disease we give the first place in prognosis to what is termed "the observed tendency of the individual case." This is not a truism, though it may sound like one. Let me take an illustration. A patient presents himself with the signs and symptoms of slight incipient tuberculous infiltration of one apex, and the question of prognosis arises. We know that the disease may either undergo early and complete arrest, or develop to a certain extent and then undergo regressive fibrotic change, or progress to softening and excavation, or become rapidly disseminated throughout the pulmonary area. It is quite out of our power to predict with certainty which of these events will happen, but, in attempting any forecast, nothing is more helpful than attention to family history on the one hand, and, on the other hand, to "the observed tendency of the individual case," which time alone can reveal. We are dealing with the power of resistance which the individual can offer to the action of the tuberculous toxins, and that power is part and parcel of the individual's heredity and "constitution"—it is developmental and evolutionary.

It has been debated whether there is any such force as a *Vis Medicatrix Naturae*. Many have regarded the existence of this force as obviously written on the face of Nature, while others have denied even its existence. Can evolution throw any light upon this question? Nothing can be more certain than that Nature tends to revert to the normal. In another connexion Francis Galton calls this "the law of regression towards mediocrity"; in other words, the tendency is for the abnormal to disappear, and for the unity of type to be preserved. Darwin thought that this law had a wide application, and was even inclined to believe that tall men often married short women, and that clever men often married silly women—Nature's unconscious protest against the abnormal and unconscious striving to preserve the unity of type. If such a law exists, we might argue without paradox that disease is the abnormal, and that, on the broad grounds of evolutionary law, we might expect the tendency to be to eliminate the abnormal and to return to the normal. That tendency may, of course, be too weak successfully to resist the forces in opposition to it.

Darwinism and Race Problems.

Let us now turn to a field where by general consent the influence of evolution has been potent. The "survival of the fittest"—a term first suggested by Herbert Spencer—and its correlative, the "elimination of the unfit," have been generally accepted as expressions which succinctly sum up the effects of the operation of natural selection. It is important to remember that "fittest" does not mean best, either physically or ethically. It simply means fittest for the conditions of existence in any given case, most fully adapted to the environment, best able to succeed in the struggle for existence. Evolution does not necessarily involve progress, though the general law is progression from the lower to the higher, from the less to the more specialized. "Everything depends upon adaptation," says Weismann, and Höffding reminds us that "adaptation and progress are not the same." Degeneration is as truly evolutionary as progress, the upward and the downward movement being both the result of adaptation. Further, evolution does not postulate that organs and organisms are perfectly adapted to their present needs and conditions. They may be in process of becoming perfectly adapted. Natural selection, Darwin reminds us, tends only to make each organic being as perfect as, or slightly more perfect than, the other inhabitants of the same area with which it comes into competition. When competition ceases, natural selection ceases. "Natural selection," says Hugo de Vries, "acts as a sieve; it does not single out the best variations, but it simply destroys the larger number of those which are, from some cause or other, unfit for their present environment. In this way it keeps the strains up to the required standard, and in special circumstances may even improve them." The conditions of racial efficiency as defined by the laws of evolution would seem to be the following:

(*a*) The race must become progressively adapted to its environment, and by environment we mean climate, food supply, and competition in the struggle for existence.

(*b*) There must be competition and struggle, leading to elimination of the unfit, otherwise degeneration will take place.

(*c*) There must not be too much inbreeding, and each strain must be from time to time crossed by another and allied strain.

To this last law there are, however, some curious exceptions. When we compare man with the lower animals in these regards we are at once struck with some obvious points of contrast. Man is not subject to the unrestrained operation of natural selection. He wears clothes and builds houses to protect himself from the storm and cold. He brings food from farthest East or remotest West to make up for the deficiencies of the home supply, and he lays up stores against the day of famine. He protects the reproductive function by law and custom. He restrains the warlike instinct and keeps it within bounds. He prevents or cures disease, makes life possible for the feeble, the ailing, and the malformed, and even gives them the opportunity of propagating their kind. He cherishes the aged, and enables them to prolong their days. By some of his laws—for example, the law of primogeniture—he sets the principle of natural selection at defiance. In these and other ways the ordinary usages of civilized society run counter to the operation of natural law, and it becomes an anxious question whether civilization in so doing does or does not contain the seeds of its own dissolution. Rousseau and his school believed that civilization involved degeneration. Evolution was not within the purview of their thought, but we cannot evade the issue—Does evolution strengthen the contention which these thinkers reached by a process of intuition, whether true or false? We hear much to-day of the degeneracy of the nation, and the existence of such degeneracy is assumed by many writers. The question is, however, one of extreme complexity. It is almost impossible to obtain the data for a just comparison as regards physical fitness between the present and preceding ages. On the one hand, the ratio of defectives—including deaf and dumb, lunatics, epileptics, paralytics, infirm, etc.—is said

to have increased from 5.4 per 100 over fifteen years in 1874 to 11.6 in 1896. On the other hand, there are some encouraging facts. The average duration of life is increasing. Some of the worst scourges of the human race—tuberculosis, typhoid fever, malaria—are abating their severity; the sick-rate of our benefit societies is declining. But these facts are not irreconcilable with the possibility of physical degeneracy. In the absence of conclusive data on this crucial question, we may ask whether any light is obtainable from the study of evolutionary law. Are there any analogies from plant or animal which may contain suggestion for us? Domestication amongst plants and animals is the analogue of civilization amongst men. The effects of domestication are, however, exceedingly complex. In some animals—for example, the bear family and carnivorous birds—domestication leads to sterility; in others—for example, sheep, pigs, and barn-door fowl—domestication seems to increase fertility. Many flowers become double under cultivation and continue fertile, while other double flowers lose their power of producing seed. Some highly-bred animals develop a marked delicacy of constitution and become very liable to disease. In some plants an artificial increase in the richness of the soil tends to the production of wood fibre rather than of flower and seed. On the whole, the above facts do not help us. The main question remains, Does civilization, by preserving the unfit and preventing their ruthless elimination which takes place in a state of Nature, imperil the physical integrity of the race? Our marriage customs—for example, the not uncommon conjunction of youth and beauty with age and wealth, the transmission of enfeebled constitutions and sometimes of actual disease from parent to child—can such things be tolerated without grave risk to the physical welfare of humanity? Is the medical profession free from serious responsibility when it preserves those whom Nature has plainly marked out for elimination, and even enables them to transmit their unfitness to their descendants? These are not extravagant or sentimental questions. They are, on the contrary, highly practical questions, and if we so often keep them out of sight, I suspect it is from an uneasy subconsciousness that they involve painful and paralysing issues.

That civilization runs counter to natural selection is, I think, evident. It interposes artificial barriers to the free play of those forces which in a state of Nature give the victory, both as regards personal existence and opportunity for perpetuating the species, to the strong, the brave, the fit. But it is not to be assumed without argument that civilization is dependent upon natural selection. According to Lloyd Morgan, "Natural selection has long ceased to be the dominant factor in human progress." The same view is propounded by J. B. Bury in the following passage: "It may be said that, so far as concerns the actions and movements of men who are the subject of recorded history, physical environment has ceased to act mechanically, and in order to affect their actions must affect their wills first, and that this psychical character of the casual relations substantially alters the problem. . . . Most thinkers now agree that the chief clues to the growth of civilization must be sought in the psychological sphere. Imitation, for instance, is a principle which is probably more significant for the explanation of human development than natural selection." That is the view of a historian, and it must be admitted that it contains a great deal of truth, though not the whole truth. Mankind is more dependent for its progress upon the brain of a Pasteur or a Lister, a Kelvin or a Marconi, than upon the muscles of many cricketers, footballers, or oarsmen. The puny, sickly, or deformed child, which, in a state of nature, would be promptly eliminated, may possess the brain of a great discoverer, poet, or statesman. Yet physical soundness can never be ignored or deemed of small significance. If physical degeneration is going on in our midst—and who can deny the fact, however much we may differ as to the extent of the fact?—we may feel sure that it is due to some species of non-adaptation to the environment. We are inclined to attribute such degeneration as exists mainly to unwholesome surroundings, bad housing, bad air, bad food, insufficient exercise, unsuitable clothing. These factors have weight—perhaps much weight—but a study of the phenomena of evolution may well make us doubt whether they are really the heart of the problem; whether, after all, the main thing is not that we are to a more or less extent breeding from the wrong stock. Few men have had less reason than Darwin to retract any opinion once definitely formulated, few have been from first to last more consistent in their views, but it is clear that Darwin wavered much and wavered often as regards the weight to be assigned to external conditions—climate, food, occupation—as factors of evolution. He was at one time inclined to attribute very little weight to such conditions in comparison with natural selection, later in life he was disposed to assign greater importance to them. Some of his followers have regarded these factors as insignificant. The point is one on which I shall not attempt to pronounce, but I shall content myself with the contention that race degeneracy, where it exists, is not to be satisfactorily explained by the operation of temporary and transitory causes, but must be sought in the most profound laws of growth and survival. Let us look at another racial problem in the light of evolutionary law—namely, infant mortality—which we are all agreed is excessive. Is infant mortality due simply to bad hygiene, unsuitable food, careless mothering, or is it in any sense the analogue of the terrific waste which we know to go on in Nature? Stand under one of our forest trees and watch the clouds of pollen which fall around. How many of these granules ever reach an ovule? In a well-known passage Tennyson tells us of the sad misgivings which the spectacle of the portentous waste in Nature excited in his breast:

> Are God and Nature then at strife,
> That Nature lends such evil dreams?
> So careful of the type she seems,
> So careless of the single life;
>
> That I, considering everywhere
> Her secret meaning in her deeds,
> And finding that of fifty seeds
> She often brings but one to bear,
>
> I falter where I firmly trod . . .

Tennyson understates the case. Nature exhibits an amazing, a sinister prodigality of increase and of destruction. A single flesh-fly, Wallace informs us, produces 20,000 larvae, which reach their full size in five days, so that each parent fly may be increased ten-thousand-fold in a fortnight. A pair of our common birds—thrush, blackbird, sparrow, titmouse—if allowed to live and breed unmolested, would have in ten years no less than twenty millions of descendants. The machinery of destruction is, however, in a state of nature, not less efficient than the machinery of growth and increase. It is a somewhat melancholy reflection that a similar law is at work amongst mankind. We may recognize this law without proposing to acquiesce in it. In this instance, as in others, we shall find that civilization and natural selection run counter to each other. As civilization advances the birth-rate falls. This is, apparently, a universal law, complicated though it may be by local conditions or national habits. The birth-rate is steadily falling amongst our own nation and even more decidedly in France and America. In the former the fall has been sufficient practically to arrest the natural increase of population. A phenomenon of this kind, apparently world-wide in its operation and one that could not have been anticipated, must depend upon evolutionary law. Herbert Spencer is inclined to think that intellectual development and the reproductive faculty have to a certain extent an invert ratio to each other, and that the rapid increase of the population of the world—"even slow-breeding man," Darwin tells us, "has doubled in twenty-five years"—will be arrested as civilization develops. I cannot detain you with any of the ethical problems which such a view suggests. I must content myself with pointing out how evolution seems to be operating, how profound is its influence, and how mistaken we shall probably be if we attribute such large facts as a falling birth-rate solely to temporary and wholly preventable causes.

The relation of the medical profession to the question of the propagation and preservation of the unfit raises many difficult questions, which cannot be adequately considered on this occasion. The question of our responsibility to those who shall come after us, though not a new ethical problem—it is found in Plato—has become a practical question only in modern times. It is a principle with which we have henceforth to reckon. The art of medicine was for thousands of years concerned solely with the cure

or relief of disease. At the present day the prevention of disease bulks hardly less largely in our thought, and this point of view indicates a distinct advance. In the future, one may predict with confidence that the preservation of the purity of the race will be regarded as one of the essential tasks of the art of medicine. The whole question, it is almost needless to say, is involved in the greatest difficulty, but it will certainly force itself increasingly upon our attention. It will do so with the greater insistence if we realize that the future physical well-being of the race will be determined more by natural selection than by attention to environment, important though this latter factor may be. That the medical profession will ever in this country be invested with disciplinary powers for the regulation of marriage seems doubtful. Such control would probably be foreign to the habits of mind of the British race, but we see that attempts have been made in this direction in some of the States of the American Union, and to a lesser extent in Germany, with what degree of success I am unable to say. It seems probable that in this country we shall have to rely upon the operation of an enlightened public opinion—enlightened as it must be, to a large extent, by the influence of the medical profession.

Is the human form destined to undergo important changes in the future under the operation of evolutionary law? Are we to look for the coming of the Super-Man, a conception with which the thought of Nietzsche has rendered us familiar? "What with man is the ape?" says Zarathustra, "a joke or a sore shame. Man shall be the same for Beyond-man, a joke or a sore shame." This is by no means certain. Weismann thinks it doubtful whether man may not have achieved the summit of his development both as regards physique and intellect, and is inclined to look for progress solely in the ethical sphere. Yet some of the facts adduced in this address seem to point decisively to the conclusion that the human body is destined in the course of many generations to undergo at least minor changes. The teeth, the hairy covering of portions of the body, the toes, the special senses, are almost certain to undergo modification. Nor can we limit the probability of change to such parts as these. All we can say in this connexion is that the changes which will come will be the outcome of evolutionary law. Useless organs will be eliminated. Useful organs will undergo progressive adaptation to altered conditions, such as diet, climate, habit, occupation. The possibility of Reversion and of Degeneration will always need to be reckoned with.

A general survey of the relation of Darwinism to the science and art of medicine is likely, I think, in many ways to be salutary. It will certainly tend to breadth of view, to a philosophic appraisement of the factors with which we have to deal, to a recognition of the great underlying laws and secular processes which are related to our art. It may, perhaps, act as a damper upon enthusiasm when we realize that evolutionary change is slow and only partially under our control; but, if this be the truth, it is better for us to know and recognize it. Medicine will gain in stability and in influence, as well as in dignity, by being in close relation with the higher thought of the day. It may in some not unimportant particulars react upon that thought. Disease becomes something more than a disagreeable and embarrassing fact when we realize how closely it is related to evolutionary processes, how vivid is the light it is capable of throwing upon evolutionary law. It even takes its place—a temporary place we may hope—in the eternal order. "Harmonious order," says Huxley, "governing eternally continuous progress; the web and woof of matter and force interweaving by slow degrees, without a broken thread, the veil which lies between us and the infinite—that universe which alone we know or can know—such is the picture which science draws of the world."

THE third International Congress of Physiotherapy will be held in Paris, March 29th to April 2nd, 1910, under the presidency of Professor Landouzy, Dean of the Paris Medical Faculty. The congress is under the patronage of M. Fallières, President of the French Republic. The work of the congress will be distributed among seven sections: Kinesitherapy, hydrotherapy and thermotherapy, climatotherapy, electrotherapy, treatment by *x* rays, radium, and light, watering-place treatment, and dietetics. An exhibition will be held in connexion with the congress.

THE IDENTITY OF BRITISH ULCERATIVE COLITIS AND TROPICAL BACILLARY DYSENTERY.

By HERBERT P. HAWKINS, M.D., F.R.C.P.,
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IN a paper read before the Bristol Medico-Chirurgical Society,[1] on the Natural History of British Ulcerative Colitis, I gave it as my belief that this disease, both the epidemic disease in asylums and the sporadic disease in the open, is a relic of the dysentery which in the seventeenth and eighteenth centuries covered the whole of Europe. I endeavoured also to ascertain how far we are justified in considering that the British disease is bacteriologically related to tropical bacillary dysentery of the Shiga-Kruse or Flexner type. The evidence as regards the ulcerative colitis of asylums is almost conclusive of the identity of the British and the tropical disease. But as regards the sporadic disease, the evidence would not bear a conclusion. Only in one certain case (Lieutenant Marshall, R.A.M.C.) has Flexner's bacillus been found. My own cases only furnished two instances in which the serum agglutinated Shiga's bacillus, and in no case was the specific dysenteric organism found.

I should like, therefore, to add a note of a sporadic case which, bacteriologically and clinically, was identical with the tropical disease as it occurs in the Philippines and West Indies This case also illustrates a point which the series of cases from St. Thomas's Hospital makes clear, namely, that the grave condition, which is most familiar to us as ulcerative colitis, in which the ulceration of the colon is so deep and extensive that repair is unlikely or impossible, is often preceded by one or more minor attacks, which have considerable natural tendency to subside. I believe that these minor preliminary attacks are not commonly recognized, but are lumped together with other forms of acute diarrhoea. It is in these minor attacks, before other bacteria come into force, that the use of the serum prepared by the Lister Institute is most likely to be of use. It is probable that these attacks are true tropical dysentery of a mild type. In cases of long standing ulceration, such as are commonly seen in hospitals, the specific bacillus may never be found, and it is not unlikely that its place has been taken by *Bacillus pyocyaneus* or by organisms of the *coli*, paratyphoid, or pyogenic groups.

History.

A man, aged 48, a metal worker, had in 1905 a severe attack of diarrhoea with griping pain, but he could not remember any other details. In 1907 he had a second attack, lasting two or three weeks, in which he passed blood and mucus, and in 1908 a similar attack of shorter duration. All three attacks occurred in July or August, the season of flies. He had not been out of England.

On July 12th, 1909, he was again seized with diarrhoea, and severe griping pain, chiefly in the left flank and groin (lower segment infection). He described the stools, of which there were four or five a day, as being "slimy" at first, but on the second day he passed red blood. There was no tenesmus. For a week the condition remained unchanged. On July 20th he was admitted into St. Thomas's Hospital, presenting diarrhoea such as he had described, the stools being liquid, dark, offensive, with mucus and a little red blood, slight pyrexia, and tenderness over the colon on the left side. At first he experienced considerable griping pain and true tenesmus was present. The rectum was hyperaemic and showed patches of blood-stained mucus; it bled on the least touch. He was given 20 c.cm. of serum, with calomel and opium. Improvement was rapid and he left hospital apparently well after a stay of seven weeks.

Bacteriological Report.

Dr. Dudgeon kindly examined a high rectal scraping, with the following result:

"Plate cultivations were made by the direct method on MacConkey's bile salt neutral red lactose agar. A bacillus was obtained which, when tested in various media, gave the cultural characters of the bacillus of Flexner, with the exception that the organism did not form indol. The patient's serum gave a well-marked agglutination reaction with this bacillus with a dilution of 1 in 20, a good reaction with a dilution of 1 in 50, and a slight reaction with a dilution of 1 in 100, within half an hour at room temperature with the microscopical method. It also agglutinnted with an antidysenteric serum (Shiga) with dilutions of 1 in 20, 1 in 50, and 1 in 100. A rabbit was immunized with the bacillus isolated from the patient. The rabbit's serum, when mixed in suitable dilutions with the

bacillus of Morgan and the bacillus of Shiga, gave no agglutination reaction with a dilution of 1 in 20. But an extremely well-marked reaction was obtained with a dilution of 1 in 20, 1 in 50, and 1 in 100, and a slight reaction in a dilution of 1 in 1,000 with this bacillus and the bacillus of Flexner. The rabbit's serum was saturated with the bacillus of Flexner and the bacillus used for the immunization of the rabbit, with the result that this bacillus was found to be specifically identical with the bacillus of Flexner."

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, March 27th, 1909.

THE ALLEGED HETEROGENESIS IN ANKYLOSTOMA DUODENALE.

BY ROBERT T. LEIPER, M.B., F.Z.S.,

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IN the reports of the Belfast meeting of the British Medical Association Dr. A. T. Ozzard, of British Guiana, publishes a paper on the "Life-history of *Ankylostoma duodenale*,"[1] reaffirming his previously published conclusions that under certain suitable conditions the ankylostome embryo can develop outside the body into sexually mature forms. As the President of the Section before which the paper was read pointed out in his remarks, the question raised is one of great importance, "because prophylactic measures that would be of value if no heterogenesis occurred would be useless if it took place." It is of equal importance also to the zoologist and systematist. Dr. Ozzard's statements deserve, therefore, careful consideration and scrutiny.

1. Dr. Ozzard quotes the recent writings of Manson and Brookes to show that "there is considerable diversity of opinion on the subject," but in both these instances the authors are merely quoting Giles's work, and are far from adopting his views. No one who has read Giles's papers on the life-cycles of parasitic nematodes is likely to give credence to his conclusions. He entirely fails to recognize the existence of free-living nematodes, and passes with astonishing rapidity from the ovum and newly-hatched embryo as it appears in the faeces of the host to sexually mature "rhabdites" on the rank vegetation around.

2. In Dr. Ozzard's description of his experiments several important desiderata are lacking.

> A small quantity of dejecta, known to contain only the ova of *Ankylostoma duodenale*, is mixed with about three or four times its bulk of water and poured on the surface of some sterilized river sand in a suitable vessel.
>
> The embryos developed into free sexually mature worms in from eight to ten days.

No mention is made of the manner in which the sterilization of the river sand or of the water was ensured, nor of the keeping of controls. It is open to doubt whether the sterilization was efficiently carried out, for the author later remarks that, "To endeavour to cultivate them in sterilized vessels and on sterilized sand, is practically asking them to survive and reproduce their species on almost nothing at all." It is noteworthy that Giles, in his "Observations on the Life-history of *Sclerostomum tetracanthum*,"[2] was unable to develop the embryos of this allied form on "moist sand," although he claimed to have found advanced forms later "on the cotyledonary leaves of some chance seedlings" near by. When we remember that free-living nematodes abound in all soil and vegetation, that their eggs and larvae are able to withstand a considerable degree of drying, and that they multiply exceedingly in the course of a few days, we should be very loth to accept results of experiments that do not rigorously exclude the possibility of their presence.

Two recent experiences of my own may be related in this connexion. Whilst pursuing certain investigations into the life-history of the *Trichostrongylus pergracilis* for the committee of the Grouse Disease Inquiry, a specimen tube was forwarded to me from the experimental station containing the dropping that had been collected from a clean board floor under one of the infected birds. On examining this a few days later, I found it to contain rhabditiform worms of small size but sexually mature. These worms continued to reproduce with amazing rapidity. The suggestion was afforded that these might be "heterogenetic" forms of the *Tr. pergracilis*, but on carefully examining the whole content of the tube, I found a small stick of heather which had undoubtedly contaminated the faeces with a rapidly multiplying free-living nematode. If dry heather be soaked in water for twenty-four hours, numerous species of free-living worms will be found wriggling in the bottom of the vessel.

The other illustration is still more striking, but is less easily explained. It is the rule for the faeces of patients in the Seamen's Hospital, Albert Dock, to be placed in flat, covered, glass receptacles when sent to the London School of Tropical Medicine for examination. These dishes are used for no other purpose, and are invariably sterilized after use. In such a vessel the stool of a foreign sailor was received, and was found to contain *Strongyloides intestinalis* in considerable numbers. It was then transferred by one of the junior laboratory attendants to a large glass bottle that had lain in the school store for several years, and had originally contained pathological specimens in spirit. Some weeks later this stool was examined again, and was then found to contain very many sexually mature forms closely *resembling* the free adults of *Strongyloides intestinalis*. For a time they were so considered by myself. The preparation was examined daily for several weeks, and it soon became evident that many generations were succeeding one another although the embryos of the free-living *Strongyloides intestinalis* do not again develop into adult forms until they gain access to the human body. Thinking that I was dealing possibly with some unobserved phenomena in the life-cycle of this parasite I then engaged upon a detailed study of the structure of the free-living adults and closely compared them with those of undoubted *S. intestinalis* that I had obtained whilst in Egypt with Professor Looss, with the result that I was forced to the conclusion that the two forms differed in several constant features. Apparently the stool had become infected in some unknown manner with an ovum or larva of a free-living nematode. Most likely the bottle itself had become infected during its prolonged sojourn in the store, or with much less probability the origin of the infection had passed through the alimentary canal of the patient.

3. Turning now to the description of the free-living forms in Dr. Ozzard's cultures we unhappily find practically nothing to enable us to ascertain their structural similarity to other forms of free-living or parasitic nature. The possibility that they are *Strongyloides intestinalis* he himself emphatically rejects. Great stress is placed, so far as I can see with no reason whatsoever, on the similarity of the ova in the mature females in the cultures to those of ankylostome eggs in faeces, but the characters of the ankylostome egg, whilst distinctive enough for diagnostic purposes when seen in human faeces, present no such pathognomonic peculiarities as should distinguish it from the ova of all other nematodes.

4. Lastly, Dr. Ozzard makes the important statement that he kept his culture for months and "could at any time (after their first free-stage generation) obtain specimens at all stages of their growth from the eggs to the adult forms." This clearly shows that the supposed "heterogenesis" of *Ankylostoma duodenale* differs in an essential feature from that occurring in other forms, yet it is exactly what one would expect to find if so rich a food medium had become infected with a free-living nematode.

REFERENCES.

[1] Ozzard: Life-history of *Ankylostoma duodenale*, BRITISH MEDICAL JOURNAL, 1909, vol. ii, p. 779. [2] Giles: *Scientific Memoirs by Medical Officers of the Army of India*, Part VII.

THE first meeting of the Italian National Committee for the Suppression of Endemic Cretinism was held at Milan on October 5th. Among those present were Professors Tamburini, Devoto, and Mangiagalli, the latter of whom occupied the presidential chair. The Minister of the Interior, the Minister of Public Instruction, and the Minister of Agriculture, together with a number of provincial and communal authorities connected with the infected zone, as well as a number of men of science, intimated their approval of the objects of the congress. Professor Tamburini read a report on the present state of knowledge in regard to endemic cretinism, and Dr. Cerletti read the proposed scheme for the study, prophylaxis, and cure of the disease, which was unanimously approved.

A NOTE ON ORIENTAL SORE.

By R. MARKHAM CARTER, Captain I.M.S.,
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In order to prevent any possibility of my being credited with priority in noting flagellate forms in cultures from Oriental sore by those readers of this Journal who may not have access to the literature of this subject, I bring to notice the following facts: In the *Quarterly Journal of Microscopic Science*, new series, No. 212, vol. liii, part 4, p. 753, Minchin, in a postscript to a communication by Dr. Row, draws attention to the fact that parasites of Oriental sore have been cultivated by Nicolle in Tunis—a fact that seems to have escaped most workers on this subject. Dr. Row's more recent work on the development of flagellates from cultures of Oriental sore in 1908 and 1909 is dealt with by Minchin in the same volume (p. 747). Dr. Row exhibited his preparations at the Bombay Medical Congress in February, 1909.

In my paper on Oriental sore of North India in the British Medical Journal of September 11th, 1909, p. 647, I was unable to criticize the results of previous workers on the flagellate forms of this class, as they were not then available to me; since, however, Dr. Row's interesting communication has appeared in print, I should like to draw attention to the following points in connexion with what is termed Oriental sore.

The term "Oriental sore" is an anomaly as it stands at present, for under this name are grouped what seem to me several clinically distinct affections of the skin and subcutaneous tissues which occur in tropical and subtropical countries. Resent laboratory research[1 2 3] on the Leishmania group indicates the probable existence of a series similar to *Leishmania donovani* in their early stages, but having culturally different requirements of temperature, acidity, etc., and differing in morphology after culture from one another. It is quite reasonable to expect that as in the case of other classes of protozoa, such as *trypanosoma*, *spirochaeta*, and *piroplasma*, further work will reveal more varieties of what are to-day grouped under one heading. I briefly referred to this in my last paper.

There are several clinical types of Oriental sore in India alone and certainly two types in Arabia. Amongst Oriental sores in North India we find the three following types:

1. *Monghyr phora*—a pale yellow painless raised area varying from ¼ to ½ in. square surrounded by a faint red margin. This sore is usually situated on the face near the lips, eyes, or on the cheek or on the forehead. Such an Oriental sore is found commonly in Gujrat, in the Lahore district, and in the Himalayas. It does not break down as other sores do. It may last for over a year, and after healing with a faint scar the disease may recur on other parts of the body, such as the elbow joint or wrist. The cultural forms and characteristics of this type of Oriental sore I have briefly described in my preliminary communication of September 11th.

2. *Chambal* is a large flat-surfaced ulcer fairly deep, with a bed of raised papilliform prolongations of the corium, which support a mass of epithelial débris.

3. *The typical Delhi boil* I have described in my previous communication, and from what I can remember of Dr. Row's communications at the Bombay Medical Congress it was a similar condition of "deep-seated boils" that afforded the material for Dr. Row's cultures. The natives of North India recognize the clinical differences between the affections, and it is interesting to note that there are striking differences between the cultural characteristics noted by Row in South India in 1908 and myself later in North India in 1909. Row, using (infected) unheated undiluted serum, obtained flagellates in seventy-two hours at 25° to 28° C. Skeins of banana shaped parasites with parallel sides and rounded ends were seen in forty-eight hours. Using "Monghyr phora" material and the same culture medium (infected capsules of unheated undiluted serum) I found that flagellates only showed under similar conditions in five days. The banana-shaped parasites noted by Dr. Row I have never yet found.

The parasite Row described from South India is capsulated and according to his plate is chiefly of an oval type. Further he states that each parasite is lodged in a clear space in the macrophage. The parasite worked with in North India has no capsule, is almost entirely torpedo-shaped, has no clear space around it, and distends the mononuclear cell it invades almost to bursting point. The rosy red parasites seen in culture tubes from cases of "Monghyr phora" apparently do not occur in the type of Oriental sore worked at by Row. If they occur they are not described by him, nor does he record flagellated bodies of this type.

There are several other points of difference, which will, however, be dealt with in my second paper on Oriental sore. Dr. Row's interesting communication now being available for criticism and confirmation by workers at this disease in different parts of the world, it will be interesting to note if, as I believe, several varieties of Leishmania morphologically similar in their early forms, will be found responsible for the various clinical conditions at present loosely grouped under the incorrect term "Oriental sore."

[Note.—In the method of cultivation mentioned in my previous paper I beg to point out two errors: 29 c.cm. should be 2 c.cm., and 50 c.cm. of venous human blood should be 5 cm.]

References.
[1] Le Kala-Azar, Infantile, Charles Nicolle. *Annales de l'Institut Pasteur*, May, 1909, p. 361. [2] Ibid., June, 1909, p. 441. [3] Sur une infection à corps de Leishman (ou organismes voisins) du Gondi, *Comptes rendus de l'Académie des Sciences*, tome cxlvii, October 28th, 1908, p. 763.

SOME OBSERVATIONS ON TUBERCLE IN BOMBAY:

WITH SPECIAL REFERENCE TO A PRECIPITATION SERUM-REACTION.*

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(Preliminary Communication.)

It would appear that tuberculous disease, which is very common in Bombay, and which runs often a very acute course, could be propagated with equal facility and equal rapidity in the laboratory animals by experimental infection. Yet when one actually comes to work with tuberculous material (mainly sputum from phthisical cases), it is interesting to note that at best one can produce a very chronic infection in guinea-pigs and hardly any disease in rabbits. Out of about 30 animals experimented upon, in not a single instance has death ensued as a result of acute general tuberculosis.

The minimum limit of the disease artificially induced in guinea-pigs has been 11 weeks and the maximum 28 weeks, giving an average of 16.3 weeks for all the animals who have succumbed to the disease. Further, a series of 3 guinea-pigs (infected with 0.1 c.cm. of sputum) show no signs of any deep infection, the only obvious lesion being adenitis of the set of lymphatic glands proximal to the seat of infection. And another series of 4 rabbits infected with 0.2 c.cm. of another sputum (rich in tubercle bacilli) are quite unaffected. In the first lot of these it may be that the virulence of the tubercle bacilli has undergone a marked diminution of virulence, as the patient from whom the infecting material was obtained was showing marked improvement in health at the time, and has been practically well for the last three years.

The results obtained so far seem to indicate that there is a great variation in the virulence of the different specimens used for infection, and it is not unlikely that both in behaviour and culture the tubercle bacilli are not all identical. But further study will throw light on this. And we may then learn what percentages are allied to particular species (bovine, human, etc.).

The particular specimen of sputum which has been chiefly used in the experiments so far completed by me was derived from a patient who died about six months from the time of his showing any symptoms or signs of the disease; it may therefore be taken to be of a fairly average virulence, and yet the results produced by this material in guinea-pigs appear to me so striking that I propose to give a summary of the effects produced after a subcutaneous infection. The animals for the first two months or more invariably flourished—that is, put on weight, and were to all appearances well, and it was only towards the last few days before their death that they

*Read at a meeting of the Bombay Branch of the British Medical Association.

showed signs of deterioration; just before death they showed the following appearances:

1. A certain amount of wasting in general.
2. An invariable enlargement of the lymphatic glands nearest the seat of infection.
3. An enormous enlargement of the spleen, which could be felt during the last weeks of the animal's life.
4. *Post mortem.*—Adenitis, caseation, and even breaking down of some of the lymphatic glands proximal to the seat of infection; pus from the same contained a fair number of tubercle bacilli, which in some specimens appeared in large clumps. Enormous enlargement of the spleen, which in some cases occupied the whole abdominal cavity. The surface of the spleen was sometimes rough, but seldom was there perisplenitis; it looked marbled, the caseating portions being separated by patches or streaks of unaltered splenic tissue, and in some cases the organ was a mass of caseating material. The spleen was firm, and the caseating masses seldom showed any breaking down. Tubercle bacilli were found, but in small numbers, in smear preparations, and cultures were obtained of pure tubercle bacilli. The liver was fatty and mottled in some places, with distinct patches of caseation, but this was less than what was seen in the spleen. Tubercle bacilli were seen, as in splenic smears. The lungs showed a fair number of tubercle bacilli and young tubercles, but obvious tuberculous masses and caseating patches were conspicuous by their absence. A few enlarged glands (lymphatic) in the abdomen, but these did not indicate the course by which infection had travelled. Some showed the presence of tubercle bacilli in smear preparations. Kidneys and suprarenal bodies were obviously healthy, no tubercle bacilli being found in smear preparations.

From the foregoing it appears that there are some important differences in the results obtained by infecting guinea-pigs from this particular tuberculous material to those one is accustomed to see in European laboratories, the chief being: (1) The slow and chronic character of the infection; (2) the production of large necrotic masses in the spleen and liver, and the absence of diffuse miliary tuberculosis, such as is seen in experiments in European laboratories with material from tuberculous patients. Briefly put, the lesions in our guinea-pigs correspond with those produced partly by human tubercle bacilli and partly by bovine tubercle bacilli, as observed by Max Beck, who in a paper on the differential diagnosis of bovine and human tuberculosis describes the lesion as follows:

In the guinea-pig infected with bovine tubercle subcutaneously, one finds more necrotic masses than tubercles. The spleen and liver have large lesions which give them a marbled appearance, the lungs are in general less affected, etc.

In the rabbit subcutaneous infection with human tubercle produces hardly any visceral lesions, those one observes being renal, while infection subcutaneously with bovine tubercle produces a general miliary tuberculosis in the kidney, spleen, liver, and lungs, etc.[1]

Although this authority may not be taken by all to be final with regard to the differential diagnosis of human and bovine tuberculosis, a subject by no means so easy as it seems, it is a fact that the two or three specimens of tuberculous material which I have used in the course of this investigation on about thirty animals, produced lesions corresponding partly with those obtained by Max Beck with bovine tubercle (and not human) on the guinea-pig and partly with those produced by human tubercle in rabbits.

From a number of observations of cases of phthisis under my own care for the last ten years, I may be permitted to make a rough generalized statement, which may be taken for what it is worth, that when a patient shows any improvement, side by side with his clinical progress, one finds in his sputum characteristic changes in the tubercle bacilli, especially in the grouping, and making allowances for all the fallacies connected with the technique of preparing the specimens under exactly identical conditions, one cannot resist being struck with the constancy of these changes, which, stated in brief, are:

1. Characteristic grouping of the tubercle bacillus—instead of being diffuse and scattered, or at best in twos and threes, they group in masses of eight, ten, or twelve or more bacilli, scattered here and there in the specimen, coming under focus as the search is proceeded with—in addition to the singles, twos, or threes, which appear to be fewer.
2. A gradual diminution of the number of the bacilli found in the sputum.
3. A morphological change of the individual bacilli—the individual rods, which were at first solid, show more beading, erosion of edges, and thinning—an appearance of distinct degenerative change in the bacilli.
4. A very great diminution of even these degenerate bacilli, so that one observes a few granules here and there indicative of some bacilli or their products.
5. Loss of their virulence, as no result is obtained by inoculation experiments.

Thus it appears that in the course of infection there is always a certain phase when agglutinins make their appearance, and these agglutinins are manifested by the groupings above referred to, and *a priori* I was led to suspect the possible presence of these bodies or allied bodies in the tuberculous sputum, in the spleen, and the liver, where the partial caseating necrotic masses were so prominently noticed in our guinea-pigs. The splenic and hepatic lesions above referred to appear to be formed as though by selection, the whole defensive machinery of the guinea-pigs being brought into activity mainly in these organs, where the poison and its reaction products, so to say, become concentrated during the course of infection.

These considerations have led me to attempt to isolate from these foci a material which, when acted on by blood serum of undoubtedly tuberculous patients, would in all probability demonstrate the presence of agglutinins. With this object in view, extracts were obtained (1) from phthisical sputum, (2) caseating glands, and (3) necrotic and partially caseous livers, and (4) caseating spleens of guinea-pigs; and from the large number of chemicals tried rectified spirit has been selected as being the best reagent for the purpose. After a series of trials, the extracts of the first three classes were rejected as being unsuited for the purpose in view, because a large admixture of substances other than the active body in question are taken up by the spirit, and these other bodies, especially fats, extractives, and possibly traces of albumose, interfere with the reaction; caseating spleens afford the best extract, especially those spleens which show a maximum of caseating material and minimum of true splenic structure.

Technique.

The animal, well advanced in tubercle, is bled to death, and the organ is taken up and cut up into small bits and ground up in a mortar with powdered glass, and the whole is taken up with spirit and allowed to extract for one or two weeks; the alcoholic extract is filtered through paper and allowed to dry over sulphuric acid, and when dry appears as a yellowish ceruminous mass with a characteristic odour, and is very deliquescent, is feebly acid in reaction, and is acid-fast to carbol fuchsin. On taking up a small particle—say, as much as a pin's head—and grinding it up in a mortar with normal saline, 1 c.cm., and centrifugalizing this saline emulsion, one obtains an opalescent fluid, which keeps its physical characteristics for several days, and it is with this solution that I try the agglutinin, or precipitation reaction, in the usual way, the only difference being that the serum is mixed in equal proportions with the emulsion and the observations recorded eight, ten, or twenty-four hours after the admixture. Should the reaction appear to be positive, the opalescent solution separates in smaller or larger particles, which coalesce, and these either sink to the bottom of the tube or stick to its side, leaving a clear fluid, or more often floats up to the top. Should the reaction be strong, this takes six to eight hours, while a feeble reaction may not come off till after twenty hours. The control reaction shows no such separation and stands turbid by contrast.

Here is a series of cases where the test was applied:

De S. Splenic extract iv; chronic course, no fever. Positive reaction.

B. W. Splenic extract iii; acute fever, 105°; very bad case. No reaction.

Ch. Early pulmonary phthisis; splenic extract iv. Positive reaction.

Woman. Early four months; splenic extract iv. Very positive reaction.

M. V. Splenic extract iv. Very positive reaction.

Mr. A. M. Three days before death; advanced cavities, semi-conscious; splenic extract iv. Very feeble reaction.

D. Two days before death; splenic extract iv. Very feeble reaction.

Mrs. U. Early case; splenic extract iv. Strong positive reaction.

B. M. Ten months' history; splenic extract iv. Strong positive reaction.

S. R. Early case; splenic extract iv. Strong reaction.

Mrs. R. (Rajkot). Early case; splenic extract iii. Strong reaction.

P. Very bad case; caseating; splenic extract iv. Feeble reaction.

Bal. Seven years' history; tubercle bacilli found in sputum; splenic extract iii. Hardly any precipitate.

Mr. C. Six weeks, very early; splenic extract iii. Feeble precipitate.

Mr. A. S. (Irani). Two years; splenic extract iv. Strong precipitate.

S. Doubtful signs of phthisis pulmonalis; no tubercle bacilli in sputum; splenic extract iv. Strong suspicion.

Dr. Heredia's case. Suspected tuberculous peritonitis; splenic extract iv. Strong precipitate in six hours.

Dr. Surveyor's case of obstinate fever; suspicion of pulmonary tuberculosis; no tubercle bacilli in sputum; splenic extract iv. Strong reaction in eight hours.

Dr. Purshotum's case of phthisis pulmonalis; six months improving; tubercle bacilli found in sputum; splenic extract iv. Strong reaction in six hours.

From the cases in the above list and others not quoted here, it will be noted that, although the test had been applied to blood serums coming from undoubted cases of tubercle, there are a few which either give a partial reaction or no reaction at all. This want of uniformity in the reaction may be partly because the microbe causing the disease may not be identical, although of the same race; or the proper vehicle to extract the most potent precipitating material, so as to bring out the reaction, is not yet found; or, again, the optimum period when a patient's blood serum is best suited for the test has not yet been determined; or, further, as in the cases where a negative result is noted, the patients being quite well for two or three years, no agglutinins are now produced in them; although the sputum in these cases does show tubercle bacilli, these are probably no more active in them than *B. typhosus* in the so-called "typhoid carriers," or streptococci or *B. coli* in healthy individuals. But all these and other questions will have to be solved only by further study. It is on this account that I desire to designate the results embodied in this paper as only preliminary observations, and have brought them before you as such.

Although the general result of the serum reaction in cases of tubercle is positive, yet when we use the splenic extract I have been able to notice an equally potent reaction in certain cases of sprue, where the patient's blood is hydraemic and slightly haemolytic, and in all cases of leprosy (about twelve) tested. It may be that in these diseases the blood is loaded with agglutin or allied substances having a definite action on the tuberculous splenic extract or the reaction product in these diseases is closely allied to that of tubercle. I have tested the value of the reaction by its giving negative results with malaria, enteric infection, dysentery, meningitis, bronchitis, and a few other septic conditions. Fuller details and the important bearings of these reactions in the study of allied diseases I reserve for a further communication.

REFERENCE.

[1] Max Beck, in *Koch's Festschrift*, p. 611-624.

A STUDY OF THE TUBERCULIN REACTIONS IN SKIN AND EYE:

A SERIES OF ONE HUNDRED AND FIFTY-THREE CASES.

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The following local tuberculin reactions were obtained in 153 consecutive cases. In all, the skin reaction test (v. Pirquet) was performed, and in 78 of these the conjunctival test (Wolff-Eisner or Calmette) was also employed. The investigation was mainly to test the value of the v. Pirquet reaction in children up to the age of 13, and also to compare it in a representative number of cases with the Calmette test.

Technique of the Skin Reaction.

The method recommended by v. Pirquet[1] and practised by him and his assistants in Vienna is to place a drop of tuberculin solution on the skin and to rub it into a skin abrasion by boring the skin through the drop with a blunt instrument—for example, a steel knitting needle. Another similar abrasion, without the use of tuberculin, serves as a control. This method is fairly satisfactory. It is superior to the method of scarification, as in vaccination. In my experience it is also better than the method recommended by Emmett Holt,[2] which consists in scratching the epidermis with a sharp point and inoculating one portion of it with the reactive fluid.

But I obtained the best results by the following modification of v. Pirquet's technique. With the sharp point of a straight surgical needle I chafed off the epidermis, exposing a small circular patch of the pink cutis vera. Bleeding or oozing was expressly avoided. On this vascular surface the tuberculin solution was placed, and rubbed in by rotation of the head of the needle. A control surface was similarly prepared and inoculated with 50 per cent. glycerine in water. The original method of v. Pirquet and the modification described were tested against one another in 9 cases. Of these, 7 gave a positive reaction with the modified technique. But with v. Pirquet's method only two positive reactions were obtained; the remainder were negative. It should be said that most of the cases tested were of advanced tuberculous disease, and so belonged to the class in which v. Pirquet admits occasional failures of reaction. Nevertheless, they tested fairly the respective merits of the two methods, and showed emphatically the superiority of the modification. It was therefore employed throughout the series. A positive reaction was defined as a red papule which persisted for seven days. Sometimes, both in the control and the tuberculin-inoculated area, a narrow red ring appeared round the puncture after twenty-four hours. This had always disappeared by forty-eight hours, and was never regarded as a positive reaction. Two characteristics were required for a positive reaction—a papule of peculiar deep livid hue, and its persistence for not less than a week after its appearance. So defined, no positive reaction was obtained in any of the controls. The strong solution of "old" tuberculin of Koch was employed.

Analysis of Results, v. Pirquet Reaction.

Disease.	No. of Cases.	Positive.	Negative.
Joint affections	15	10	5
Enlarged glands of neck	17	14	3
Affections of bone	5	5	0
Pleural effusion (serous)	14	13	1
Pulmonary fibrosis and bronchiectasis .	6	4	2
Tuberculous peritonitis	12	9	3
General tuberculosis	4	0	4
Tuberculous meningitis	4	1	3
Non-tuberculous meningitis and cerebral tumour	7	1	6
Marasmus and chronic diarrhoea ...	9	2	7
Bronchopneumonia	12	3	9
Lobar pneumonia	10	0	10
Empyema	11	0	11
Chorea	3	0	3
Rheumatism	5	0	5
Miscellaneous	14	1	13
Skin diseases	5	2	3

Results.

The accompanying table gives the results. In the group of diseases of bone, lymphatic glands, and joints, the reactions were very clear, either emphatically positive or negative. It will be seen that a large proportion of the cases of enlarged or suppurating neck glands gave positive reactions. The test was of great value in obscure joint conditions where the clinical diagnosis was doubtful, and especially in cases of slight but persistent joint disablement after injury. If the v. Pirquet test can be absolutely relied on, its positive or negative findings in such cases must be of unique assistance to early diagnosis.

Perhaps the most significant group is that of the simple pleural effusions. In adults their close association with pulmonary tuberculosis is recognized. In children the association is not generally regarded as equally inevitable. But in the above group, 13 out of 14 cases gave a positive reaction. If this test is a true indicator of tuberculosis, these results must mean that already there is a systemic infection by the bacillus. Whether the pleural effusion is a chronic tuberculous inflammation of the serous membrane, or the skin reaction is a response to tuberculous infection of deep lymphatic glands, say, at the pulmonary roots, it is, of course, impossible to say.

The cases of tuberculous peritonitis for the most part reacted well. Three failed to react. They were all severe cases with great general prostration, and two of them have already proved fatal.

The groups of tuberculous meningitis and general tuberculosis illustrate well how in very severe or general infections the test, like the ophthalmo-reaction, breaks down. In all the cases of these groups the clinical diagnosis was confirmed *post mortem*.

In the group of non-tuberculous meningitis and cerebral tumour, the single case that gave a positive reaction was of unusual interest and may be specially mentioned.

A girl, aged 3 years, was admitted with fever, deep coma, and marked head retraction and general rigidity amounting to opisthotonos. The clinical picture was that of epidemic cerebro-spinal meningitis. The v. Pirquet reaction was intensely positive. Lumbar puncture yielded abundant clear fluid, remaining clear after boiling and containing very few lymphocytes. This fluid also gave a positive skin reaction on inoculation. In four days the child was well, fully conscious, without fever or muscular rigidity, though lumbar puncture again gave excess of similar fluid.

A fortnight later, just before dismissal, the v. Pirquet test was repeated and was again markedly positive. In a month the child returned to hospital with measles, and the v. Pirquet reaction was now negative. This is consonant with Holt's statement that a superposed intoxication interferes with the tuberculin reaction.[3] But the original positive reactions with the clinical signs would indicate a tuberculous focus in the cerebro-spinal axis. Meningitis can be ruled out, both by the fact of recovery and by the characters of the spinal fluid. The probable diagnosis is therefore a tuberculous mass in the cerebellum setting up temporary pressure and causing the clinical phenomena described.

Of the skin conditions, two were clinically tuberculous—lupus and tuberculous ulceration—and gave positive reactions. The remaining negative results were in cases of eczema.

The numerous control cases were taken from cases of lobar pneumonia, empyema, chorea, and other miscellaneous conditions. They were all negative, with the exception of a very healthy-looking girl, aged 13, who gave an intense reaction.

The important question is, Is the cutaneous tuberculin reaction reliable? The above results show that it is not so in advanced tuberculous disease. But in such the diagnosis is usually evident. In early or chronic conditions the results obtained are very strongly in favour of its reliability. Absolute proof is impossible. If a positive reaction is obtained in an apparently healthy subject, the only other evidence is that of the conjunctival and hypodermic reactions; and that if it confirms, is only confirmatory—it is not fresh evidence.

It is, however, certain that the reaction is specific, and, though local, an index of a general blood condition. If the reaction is repeated, it is always confirmed, *provided the general condition of the patient remains the same.* In 18 of the above series, I repeated the test after a varying interval. Of the original results, 11 were positive, and 7 negative. The repeated tests confirmed these in every instance. So far as proof is in the meantime possible, a positive v. Pirquet reaction may be regarded as a certain index of tuberculous disease, whether it is clinically manifest or not.

Late and Negative Reactions.

It is very necessary to make the proviso that, in a repeated test, the condition of the patient in general vigour and vitality must remain approximately the same. The recital of the following case makes the point very clear:

B. W., aged 4, a well-developed, but thin little girl, was admitted on April 15th for whooping-cough. No physical signs of tuberculosis in lungs, abdomen, or lymphatic glands. On April 17th she gave a marked v. Pirquet reaction. She steadily lost weight and strength, and on May 25th was very weak and emaciated; the test then repeated was negative. A few days later she developed measles. On June 8th the test was repeated, and was negative. Now there were signs of consolidation at the right apex and both bases. Death occurred on June 20th, and *post-mortem* examination showed enlarged lymphatic glands at the lung roots, hard, caseous and pigmented; extensive caseating tuberculosis in both lungs, and recently enlarged peritoneal glands, with numerous tubercles in the peritoneum.

Such a case is a striking illustration both of the strength and weakness of the von Pirquet test. It is capable of detecting tuberculous disease where clinical manifestations are completely wanting. It is a very delicate test in early conditions. And yet in advanced stages of the disease it may completely fail.

The two following cases illustrate the same point, the alteration of the reaction with the altered condition of the patient. The change is here less extreme, but no less interesting.

Name and Age.	Disease.	Development of First Reaction.	Change of Condition in Interval (Several Weeks).	Development of Second Reaction.
H. C., 10 years	Tuberculous hip	24 hours	Retrogression	48 hours
R. L., 10 years	Enlarged cervical, inguinal and axillary glands	Absent	Improvement	24 hours

These results lead up to the cases of late reaction—that is, where an abnormally long period elapses before the appearance of a reaction. Any period over twenty-four hours has been regarded as a late reaction, and the limit is stated to be forty-eight hours. In several of the following cases this limit was exceeded. Where two periods of time are given the first refers to the earliest appearance of a flush or areola, the second to the development of a definite papule, which completes the reaction.

Name.	Disease.	Time of Reaction.
A. C.	Abdominal tuberculosis	36 hours.
D. B.	Spinal abscess and gangrene of lung	48–72 hours.
J. W.	Tuberculous hip	48 hours.
H. C.	Tuberculous hip	48–72 hours.
V. T.	Bronchopneumonia	48–72 hours.
M. M.	Abdominal tuberculosis	72–90 hours.
V. L.	Abdominal tuberculosis	72–120 hours.

Holt states that the appearance of the areola is rarely later than twenty-four hours; and yet in the above series, which is much less numerous than his, 6 cases did not show reaction till forty-eight hours or later. In 2 cases the areola only appeared after three days, and in one the papule did not develop until after five days. Possibly these very late reactions have been overlooked in other investigations. It is more probable that they did not occur, because of the different technique employed in the performance of the test, and that their appearance in the above series is due to a superior technique. The modification of v. Pirquet's technique employed in this investigation may seem very trifling, but the tough epidermis is a serious barrier between the capillary circulation of the skin and the outside. And refinements of technique are not unimportant if they ensure contact of the toxin with the local circulation. That this modification is highly important has already been demonstrated by the results of a short series of cases in which it was compared with the original technique of v. Pirquet. It is also extremely probable that it accounts for the very late reactions shown in the above table.

These late reactions all occurred either in cases of widespread tuberculous disease, or where the local disease was complicated by another infection, as in the two cases of hip-joint disease. They form a group intermediate between those of vigorous reaction in early or moderate cases and those of negative reaction in advanced cases. Such negative reactions in my series were obtained in the following conditions:

Negative Reactions.

Condition.	Number of Cases.
General tuberculosis	... 4
Tuberculous meningitis	... 3
Tuberculous peritonitis	... 3
Bronchiectasis	... 1

All these were cases of very active or very widespread tuberculosis, in which the general prostration and weakness was profound; but of the 11 cases 10 have already died, and in every fatal case the clinical diagnosis of tuberculosis was confirmed *post mortem*.

The conclusion to be drawn from these cases of late and negative reaction to v. Pirquet's test is that the vigour of the reaction varies directly with the vigour of the patient and inversely with the amount of tuberculous infection. Where the general vigour is only slightly impaired a rapid and intense reaction is obtained. The most intense reactions I obtained were among the cases of osseous and joint tuberculosis, and also of pleural effusion. But where the vigour of the patient is low and the disease is widespread or complicated, the reaction is late in appearance and feeble or is absent altogether. With regard to the same point in the ophthalmo-reaction there is some difference of opinion. That will be discussed later. But in v. Pirquet's reaction the whole evidence strongly points to the conclusion just reached.

Comparison of the Conjunctival and Skin Reactions.

In 78 cases the Calmette and v. Pirquet reactions were tried in the same patient. The v. Pirquet test was performed as already described. In the Calmette test the dried tuberculin was used in 0.5 per cent. solution in distilled water. The solution was only employed freshly made up. The results were as follows:

	Positive.	Negative.
V. Pirquet	31	47
Calmette	21	57

I should say that these cases are not new, but have already been included in the v. Pirquet series. Out of the 78 cases, the v. Pirquet test was positive in 31; it was negative in 47. In these 47 negatives the Calmette reaction was also negative in every case. It was positive in 21 of the cases in which v. Pirquet was positive, but it failed to react in the remaining 10 cases in which v. Pirquet was positive. That is to say, out of a total of 78 cases, the Calmette test either coincided with the v. Pirquet or contradicted it negatively. It did not contradict positively in a single case—that is, it never gave a positive reaction where the v. Pirquet was negative. A closer analysis of those 10 cases may be useful.

Name.	Condition.
G. B.	... Tuberculous ankle.
D. W.	... Tuberculous spine.
J. W.	... Simple pleural effusion.
W. B.	... ,, ,,
F. G.	... ,, ,,
A. S.	... Chronic bronchopneumonia.
C. W.	... Tuberculous peritonitis.
R. S.	... ,, ,,
H. C.	... Tuberculous hip-joint (mixed infection).
J. A.	... Tuberculous meningitis.

(V. Pirquet's reaction was positive and Calmette's reaction negative in all these cases.)

These conditions may be said to include all degrees of severity of tuberculous infection, so that in this list the v. Pirquet test is superior to the Calmette over the whole range of tuberculous conditions. The superior delicacy of the skin reaction is not partial or in one direction. It is total and in all directions. In these 78 cases it undoubtedly failed in some cases of widespread tuberculosis; it may have failed also in some incipient cases. But in each of these extreme directions it gave some reactions where the conjunctival test did not; and in neither of these groups did the Calmette test succeed where the other failed.

At the last meeting of the British Medical Association Calmette held that the conjunctival reaction was more useful than the skin reaction, because of the failure of the former to detect healed or quiescent tubercles.[4] That is really an admission of the greater delicacy of the v. Pirquet test. Moreover, it is a difficult matter to say when a tubercle is healed. So long as the blood reacts to the skin test the tuberculous focus is potentially active. In the adult the limitation of the focus is more thorough; but in the child the activation of a buried tuberculous lymphatic gland may in a few weeks cause a general dissemination of tubercles, so that in children the power of the v. Pirquet test to detect latent or quiescent tuberculosis gives it an important advantage.

It must be noted that in the above cases a weak solution of tuberculin (0.5 per cent.) was used for the eye test. Again, the subjects were all children, and though the solution could always be dropped on to the eye, it was often much diluted by a flood of tears. But these difficulties are inherent: stronger solutions in the eye are sometimes unsafe, and children will not cease to cry. Dealing with the skin much stronger solutions are used and can there be brought more effectively into contact with the local circulation. In a comparison of these two forms of tuberculin reaction, their essential similarity must be admitted. Both are vascular reactions depending on the close contact of toxines with the capillary circulation. But their practical application is different. With the skin it is safe to sensitize the local circulation by some form of scarification or abrasion. With the conjunctiva it has from the first been recognized as dangerous to employ the test where any degree of inflammation is already present. We aim at producing an abraded cutis. We deliberately avoid an injured conjunctiva. In that contrast lies the cause of the superior delicacy of the v. Pirquet test.

But it is needful to point out that the superficial circulation is much less accessible in the skin than in the eye. Therefore a proper technique in preparation of a vascular surface on the skin is highly important. Neglect of that may turn the balance in favour of the eye reaction, and may throw away the advantage in delicacy and safety which the v. Pirquet test undoubtedly possesses.

One final point is worth mentioning. It is much disputed whether severe conjunctival reaction means an active tuberculous process or the reverse. Wolff-Eisner holds the former view.[5] Calmette, in his statement that the severity of the reaction corresponds with the number of antibodies present in the blood, inclines to the latter view.[4] The evidence seems to be conflicting; but in the v. Pirquet test it has already been shown that the severity of the reaction varies inversely with the severity of the disease. In the skin the conditions almost approximate to those of an exact experiment by a definite abrasion. In the conjunctiva, the local vascularity, and therefore the local sensitiveness, must vary much even within the range of health. That fact probably explains the discrepant results obtained.

In conclusion, I would cordially express my thanks to the members of the staff of the East London Hospital for Children for their permission to use the abundant material of the hospital for the purpose of this investigation.

References.

[1] *Deut. med. Woch.*, May 23rd, 1907. [2] Report upon 1,000 Tuberculin Tests in Young Children, *Trans. Amer. Ped. Soc.*, vol. xx, 1909. [3] Ibid. [4] British Medical Journal, August 28th, 1909. [5] *Berl. klin. Woch.* 1908, vol. xlv, p. 365.

A CASE OF DISSEMINATED TUBERCULOSIS TREATED WITH MARMOREK'S SERUM.

By HENRY HEMSTED, M.D.Brux., M.R.C.S., L.R.C.P.,
CHRISTCHURCH.

The results of treatment by Marmorek's serum in the following case seem to me sufficiently striking to render its publication desirable.

The patient was a schoolboy, of Spanish nationality, aged 15. He was first seen on December 14th of last year, when he was suffering from severe haematuria of more than six months' duration. His temperature was 103° F., and the abdomen was distended. There was an operation scar in the right kidney region. The case rapidly assumed a typical typhoid condition, with evening temperature about 104° F. and slight morning remissions. The following is a summary of the symptoms at this time:

The pulse was very rapid and feeble, the abdomen distended, with thickening in the right kidney region; pale yellow diarrhoea with much mucus and some blood; profuse haematuria but no pyuria; rapid emaciation. Widal's reaction was repeatedly negative, and so was the Ehrlich Diazo test. The blood counts showed distinct paucity of leucocytes.

We were a little baffled at this stage by misleading information to the effect that the operation scar was due to a successful nephrolithotomy, but we now obtained a more veracious account from France which made it obvious that the case was tuberculous. We ascertained that the right kidney had been removed in the previous June for tuberculosis, and the bladder and prostate were found cystoscopically to be tuberculous.

Within the next few days crepitations gradually developed all over both lungs, and there was constant short, dry cough, but no expectoration. Intestinal matting occurred throughout the abdomen, especially in the flanks. A distinct squint developed in the left eye, but no choroidal tubercles were discovered. The ophthalmoscopic examination was not very complete owing to the patient's deplorable condition at this time. He became delirious, with constant twitchings of the face and eyes, and emitted loud meningeal cries.

About this time the patient was seen by several eminent medical men, including specialists, from London and Paris, and I think I may fairly say the consensus of opinion was that the boy could not live more than three or four weeks; at any rate, I expressed that opinion emphatically to the relatives. He had been given sodium cacodylate and $\frac{5}{60}$ mg. T.R. injections without apparent effect.

On January 17th, 1909, after the patient had been acutely ill for a month, Dr. Marmorek arrived from Paris, and in spite of the fact that the lad was almost moribund, with every evidence of generalized miliary tuberculosis, he took a positively cheerful view of the case, and advised injection each day of 5 c.cm. of his new serum, which is made from what he calls the primitive tubercle bacillus obtained from the growing margin of a culture. With this he immunizes a horse for about eight months, and thence obtains his serum. Injections were made subcutaneously in the thighs in the usual way through a bead of lysol for twelve consecutive days, at the end of which some abatement of the acute symptoms was observed. Dr. Marmorek then visited the patient again and advised 10 c.cm. of serum per rectum, but this produced no good result, and this, indeed, has been my experience of giving any serum by the rectum.

Hypodermic injections were therefore resumed, and twenty-eight doses of 5 c.cm. were given during the ensuing seven weeks, during which time the patient slowly but surely improved. He gained weight and strength, intestinal matting subsided, diarrhoea ceased, squint disappeared, and the urine showed no blood except under the microscope. Crepitations and rhonchi gradually subsided, and though a pleuritic effusion of slightly turbid fluid appeared on the left side, this absorbed rapidly after tapping.

By April the patient was able to return to Paris, looking the picture of health and having regained his normal weight. Dr. Marmorek has sent most favourable reports since. The only apparent abnormality now is the presence of a little albuminuria, and this is diminishing. The last report, received during October, was that the patient was very well and putting on weight.

The chief features of interest were:

1. Repeatedly negative Widal's when every symptom was consistent with typhoid. I may say that in my experience Widal's test is actually more reliable than clinical evidence. This was very noticeable in the Bristol typhoid epidemic some years ago.

2. There seemed no doubt that Marmorek's serum—of which this patient had forty injections, or nearly half a pint altogether, in less than three months—was responsible for the improvement. The clinical signs pointed to tuberculous lesions of the intestines, peritoneum, bladder, lungs, and meninges, and I suppose the invasion was of the miliary type, in which case, by all the rules of medicine, surgery, and midwifery, the patient ought to have died.

3. Temperature reactions, commencing about three hours after injections, are prominent in the charts.

4. Of course it is impossible to say that the lad will not ultimately become a chronic phthisic, but his improvement being so steady and consistent is most encouraging.

I have not entered into minutiae of symptoms and treatment, and I am aware the case is open to certain criticisms, inasmuch as no tubercle bacilli were actually demonstrated in the urine or elsewhere, and there was no sputum at any time to examine. I have merely published the crude facts as they appeared to me, and I think they justify a more extended use of this antituberculous serum.

The Science Committee of the British Medical Association.

Report CXVII.

FURTHER RESEARCHES INTO THE BACTERIOLOGY AND VACCINE THERAPY OF COMMON COLDS.

By C. H. BENHAM, M.D., M.R.C.P.,
Hove, Sussex.

In a former paper[1] I drew attention to the occurrence of a diphtheroid bacillus for which the name *Bacillus septus* was suggested. This germ was associated with the *Micrococcus catarrhalis*, and occurred in 20 out of 21 cases examined during the winter 1905–6.

During the winters of 1907–8 and 1908–9 further researches have been carried out on similar lines, with results which may be summarized as follows:

1. The prevailing organisms—that is, those which were present in greatest numbers and grew most readily—were the *Micrococcus catarrhalis* and the *Micrococcus paratetragenus*.

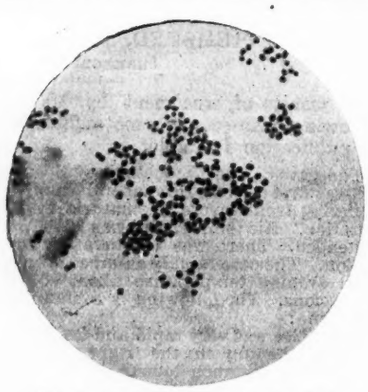


Fig. 1.—Photomicrograph of a forty-eight hours' culture of *Micrococcus catarrhalis* × 1,000 diameters.

2. The *Bacillus septus* was present in a number of the cases, but did not grow readily, and was difficult to isolate. This is in marked contrast to its behaviour in 1905–6, when it grew with great ease on ordinary media.

3. The bacillus of Pfeiffer was present in small numbers in a few of the cases, but it was not possible to isolate it.

4. The pneumococcus was seen in the swabs in a few cases, but in small numbers, and it was not isolated.

5. The bacillus of Friedländer was isolated from a few of the cases.

The organisms which appeared to me to be the causal factors in the majority of the cases were the *Micrococcus catarrhalis* and the *Micrococcus paratetragenus*. The *Micrococcus catarrhalis* is already well known, having been described in a paper by Drs. Dunn and M. H. Gordon on The Bacteriology of an Epidemic Simulating Influenza.[2] It is described at length in an article by Neisser and Kolle in Wassermann's *Pathologenen Micro-organismen*.[3]

Characters.—It is a rather large coccus, occurring in pairs, or sometimes in dense masses, in the sputum or in swabs taken from the noses and throats of patients suffering from common colds, "influenza," bronchitis, and pneumonia. It can be seen in masses in pharyngeal cells, and occasionally in leucocytes. It is negative to Gram's stain, and resembles the gonococcus, though I think it is usually rounder and less bean-shaped.

Cultures.—It grows readily on nasgar, blood agar, and on ordinary agar (especially if made with 2 per cent. of Witte's peptone). On these media colonies appear in twelve to eighteen hours at 37° C. They are at first translucent, but rapidly become yellowish-white, rounded, and raised above the surface of the medium. The colonies are very viscid, and adhere firmly to the medium, so that it is easy to touch them without removing any of the growth. This may account for the difficulty of subculture which the writer and others formerly experienced. If one is careful to remove a visible portion of growth from a colony, the subcultures grow readily and are vigorous.

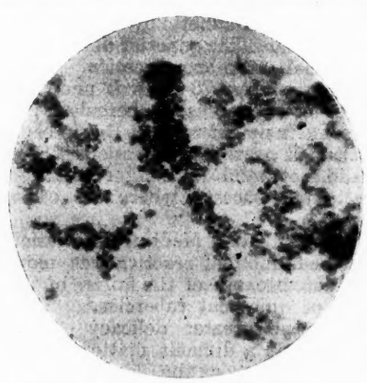


Fig. 4.—Culture of *Micrococcus paratetragenus*.

On gelatine growth takes place more slowly, and the gelatine is not liquefied. It grows in broth, and does not produce acid in broth containing 1 per cent. of glucose, lactose, maltose, saccharose, or mannite.

The *Micrococcus paratetragenus* is not so well known as a pathogenic organism. I think it has been taken for the *M. catarrhalis* by some observers, and described as a large staphylococcus by others. It has been described at length by Bezançon and de Jong,[4] who believe that it can be distinguished from the ordinary *M. tetragenus* of the mouth by its peculiar morphology and staining reactions. On this point I am not quite convinced, but have nevertheless adopted the name *Micrococcus paratetragenus*.

Its characters are as follows: It is a coccus of very variable size, and is very common in the sputum in all kinds of pulmonary affections, as well as in mild catarrhal cases.

It can frequently be seen packing pharyngeal cells, and its peculiar morphology is very characteristic. It occurs in masses, pairs, or tetrads, often surrounded by a very definite capsule or zoogloea. The masses consist of several very large tetrads which stain deeply with aniline dyes, and are intensely stained by Gram. These are embedded in a mass of smaller tetrads and diplococci, amongst which are often minute bacillary forms. The smaller elements stain feebly, and are negative to Gram's stain.

F g. 2.—Plaque of pharyngeal cells containing *M. paratetragenus*.

In cultures the *M. paratetragenus* grows very readily on all the ordinary media. On agar definite colonies appear in twelve hours at 37° C., and growth also takes place freely but rather more slowly on gelatine at 22° C.; the gelatine is not liquefied. The colonies are rounded, creamy white, and glistening, but occasionally they have a yellowish tinge. They are soft, and are readily removed from the medium by the platinum wire.

Acid is formed in glucose, lactose, saccharose, maltose, and mannite broths. The appearance of the cocci in subcultures varies very greatly, but there is nearly always a considerable difference in the size and intensity of staining of the various elements. Commonly very large tetrads without zoogloea appear in twenty-four hours, but sometimes large single cocci or diplococci, which are strongly positive to Gram's stain, and might on a cursory examination be taken for large staphylococci.

The above have been the prevailing organisms, but numerous others have been found with less frequency. In a few cases I have found the bacillus of Friedländer, and in a few cases Pfeiffer's bacillus in very small numbers.

Pneumococci have been seen in throat swabs, but in small numbers, and I have not succeeded in satisfactorily growing them. There is also a polymorphous organism which occurs frequently. It forms dewdrop-like colonies, which resemble those of a streptococcus, and consist of chains of oval cocci, bacilli, and wedge-shaped and irregular forms. The cocci are very variable in size and shape, and often seem to be capsulated. As to the nature of this germ and its possible rôle I am at present uncertain, but it appears to correspond to an organism resembling a streptococcus, and described by Thiercelin as the "enterococcus."[5]

Are these organisms pathogenic?

The Micrococcus Catarrhalis.

1. This organism has been found in "influenzal" cases by the following: Sternberg,[6] Hastings,[7] Rubermann,[8] Kleineberger,[9] Bulloch,[10] Gordon,[2] the author.[1]

2. It causes fatal peritonitis when injected into the peritoneal cavity of guinea-pigs (Gordon[2]).

3. Gordon states that he contracted an acute cold by accidentally sucking up a pure culture of *Micrococcus catarrhalis*. Quoted by Allen.[11]

4. Variations of opsonic index to *M. catarrhalis* in cases of common cold (Allen[11]), and improvement in clinical condition after injection of vaccine.

The Bacillus Septus.

1. This bacillus has been found in cases of common cold (Edmund Cautley[12] (*Bacillus coryzae segmentosus*), Gordon,[13] Prosser White,[14] the writer,[1] R. W. Allen[11]).

2. Some of Dr. Allen's most successful cases of treatment of common colds by vaccine therapy have been cases in which *B. septus* was the infecting agent.[15]

The Micrococcus Paratetragenus.

1. This micrococcus has been found in cases of influenza (Bezançon and de Jong[4]), and in a case of fatal pulmonary gangrene (Bezançon[16]). The writer has found it in a large number of cases of common colds and mild influenza.

2. Opsonic determinations are at present few; the writer is of the opinion that variations of the opsonic index occur after the injection of a vaccine of *M. paratetragenus*, but his observations are at present too few to speak with certainty.

The Bacillus of Friedländer.

1. This bacillus has been found in coryza (Cardone[17]), in aphthous stomatitis (Bernabei[17]), in acute pharyngitis with oedema of glottis (Weichselbaum[17]), tonsillitis (Nicolle and Hébert[17]), parotitis (Girode[17]), middle-ear disease (Zaufall[17]), in cases of common cold, especially chronic nasal catarrh (Allen[11]).

2 Vaccine therapy, in cases of common cold, especially chronic nasal catarrh (Allen[17]).

Fig. 3.—Pharyngeal cell containing *B. septus*. A group of *M. paratetragenus*.

Opsonic Work.

The writer has recently carried out some observations on the opsonic index in cases of common cold and mild influenza. The results, as far as the *Micrococcus catarrhalis* is concerned, appear to confirm those of Allen. A few observations have been made with *M. paratetragenus*, *B. septus*, and Friedländer's bacillus, but the results obtained have not been conclusive.

A few illustrative cases will be quoted.

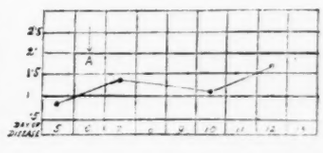
CASE I.

Throat and ear specialist. Acute cold in the head, sore throat, cough five days.

In this case there was a rise of the opsonic index from 0.8 on the day preceding the injection of .125 million of stock *catarrhalis* vaccine to 1.6 six days later. The patient was already recovering from his cold when the injection was given. I could not be certain whether the treatment accelerated his recovery or no. He has had several slight colds since.

CASE II.

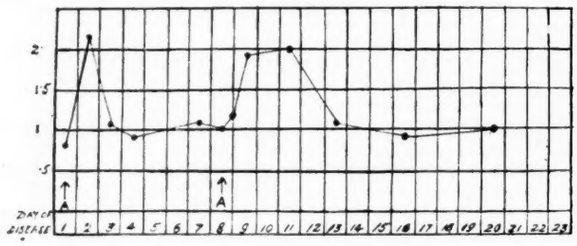
Throat and ear specialist. Is subject to acute colds, which usually last three weeks, beginning with sneezing, dryness and tickling of nose and upper surface of soft palate, and usually going on to naso-pharangeal catarrh, with irritable cough and mucous expectoration.



CASE I.—A = Injection of 125 million stock *M. catarrhalis*.

Present Attack.—Caught while having his hair cut by a hairdresser who was suffering from a streaming cold. Within twenty-four hours there was sneezing and tickling in left nostril and pharynx, and mucous membrane of nose appeared red and glazed. In the direct smears taken from the posterior pharyngeal wall the *M. catarrhalis* was seen and afterwards

isolated. Two hundred and fifty million of stock *catarrhalis* vaccine prepared from a case of acute influenza by the writer



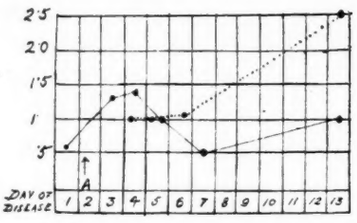
CASE II.—A = Injection of 250 million.

were given within twenty-four hours of the onset. The attack appeared to be similar to previous attacks, but by the third day the symptoms had completely disappeared, he saw his out-patients at the hospital, attended the hospital committee, and read aloud to his wife in the evening.

On the eighth day a further dose of 250 million of stock vaccine was given, without subjective symptoms, but with a more prolonged rise in the opsonic index. The patient remained perfectly well for five weeks, when he had a second acute attack following a journey to town, and an injection of 250 million of stock *catarrhalis* vaccine was given *twenty-eight hours after the onset*.

Four hours after the injection the patient felt ill, had a rigor, and a temperature of 104° F., and was confined to his bed next day. The *Micrococcus catarrhalis* and the *Micrococcus paratetragenus* were both isolated and autogenous vaccines prepared.

The patient was better on the third day, and the symptoms disappeared with the exception of a feeling of prostration and a slight cough. As he had some important engagements and did not wish to risk a severe negative phase, the autogenous vaccines were not given. In spite of this fact it will be seen from the chart that the opsonic index to *M. paratetragenus* was as high as 2.5 on the thirteenth day. The patient has had one or two slight colds since, which have aborted within twenty-four hours. It appears, therefore, that some degree of immunity was obtained, and it is probable that had the autogenous vaccines of both *M. catarrhalis* and *M. paratetragenus* been used a still better result might have been obtained.

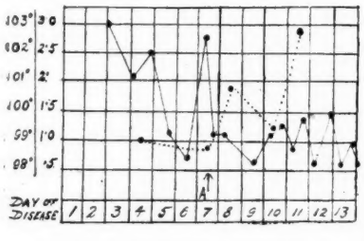


CASE II.——— Opsonic index to *M. catarrhalis*; ..... opsonic index to *M. paratetragenus*. A = Injection of 250 million.

This case illustrates the danger which Allen[11] points out, of giving a vaccine on the second day of an acute attack.

CASE III.

Mr. O., dispensing chemist. The case was one which any clinician would diagnose as one of mild "influenza." The onset was acute, and in twenty-four hours the patient was ill, with severe headache, sore throat, backache, stiff neck, and a temperature of 103°. The *Micrococcus catarrhalis* was isolated from the throat, and a vaccine prepared from it. On the sixth day the patient seemed better, and the temperature was normal in the evening; but on the seventh day it rose to 102.4° in the morning, and there was acute pain and feeling of tension in the right ear, with a swollen, tender gland in anterior triangle of neck on right side; 250 million of the autogenous vaccine were given, after which the temperature rapidly came down, the pain in the ear and the glandular swelling disappeared. His convalescence was fairly rapid, and he returned to work in a fortnight.

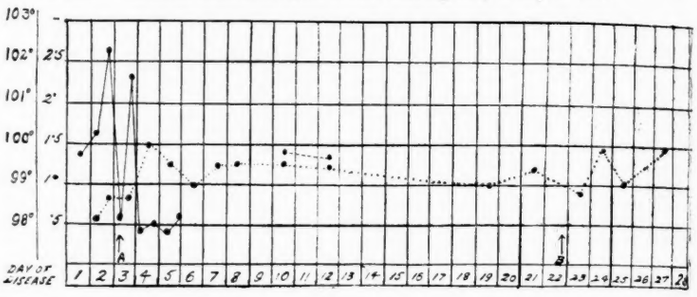


Case III. ——— Temperature; ..... opsonic index to *Micrococcus catarrhalis*. A = Injection of 250 million. The chart illustrates the inverse ratio between the temperature and the opsonic index.

CASE IV.

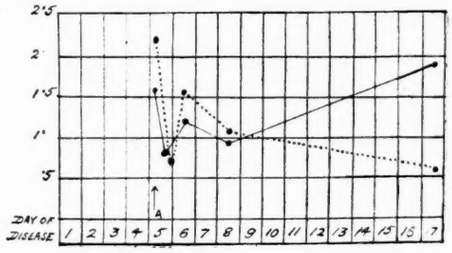
Housewife, aged 35. "Influenza" coming on after a drive on a very cold day. Severe frontal headache, malaise, pains all over; temperature 102.4°. *M. catarrhalis* isolated; 250 million of a stock vaccine prepared from Case III were given on the third day. Within twenty-four hours the patient was convalescent, the temperature normal, and the attack was certainly cut short. A slight cough remained, which was loose. The patient remained well until the twenty-second day, when there was a further sore throat and nasal obstruction. A further dose of 500 million of stock *catarrhalis* vaccine was given. For the following twenty-four hours there was considerable malaise and an irritable cough, but the patient again became rapidly better on the third day after injection.

A third attack took place six weeks later, in which the *M. catarrhalis*, *M. paratetragenus*, and *B. septus* were all present. A dose of Dr. Allen's mixed vaccine was given, with the result that there was some improvement in the cough, but this did not disappear for several weeks. There have been several abortive colds since, lasting only a day or two.



Case IV. ——— Temperature; ..... opsonic index to *M. catarrhalis*; ------ opsonic index to *M. paratetragenus*. A = Injection of 250 million, and B of 500 million.

Relapse six weeks later. The opsonic curve to the *Micrococcus paratetragenus* appeared to follow that of *Micrococcus*



Case IV. ——— Opsonic index to *M. catarrhalis*; ..... opsonic index to *M. paratetragenus*. A = Injection of 100 million.

catarrhalis very closely during the period immediately following the injection of the vaccine.

CASE V.

Medical practitioner. Has suffered from winter cough for the last fifteen years. It usually comes on in the autumn and lasts till the spring, with repeated acute attacks of naso-pharyngeal catarrh. Last winter he had an acute attack six weeks before treatment was begun, and had had troublesome cough with a little mucous expectoration in the morning ever since. He was advised to winter in Egypt, as slight emphysema was present.

The *Micrococcus catarrhalis* and *Micrococcus paratetragenus* were isolated and a vaccine made of the *M. catarrhalis*.

On November 24th 250 million of stock vaccine prepared from Case III were injected. The opsonic index at time of injection was 1.4. Four hours later it fell to 1, then rose to a maximum of 1.95 on November 27th.

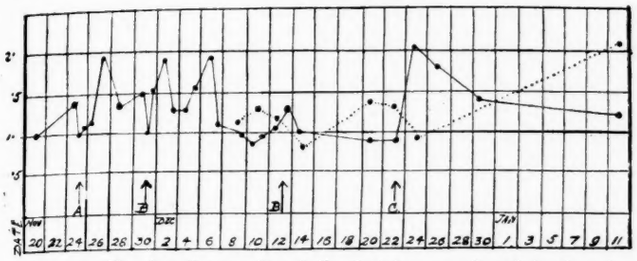
On November 30th the opsonic index was 1.45; 250 million of autogenous *catarrhalis* vaccine were injected. Four hours later the index had fallen to 1, but on December 1st had risen to 1.5, and on December 2nd to 1.85.

On December 12th a further injection of 250 million appeared to produce little result. A mixed vaccine was then made from a nasgar plate on which a piece of washed sputum had been smeared; all the organisms were washed off indiscriminately, and a vaccine made in the usual way. It consisted of *M. catarrhalis*, *M. paratetragenus*, a small diphtheroid bacillus, and other organisms; 500 million of this were injected on December 22nd, with a rise of the index to *M. catarrhalis* to 2.1 on December 24th. The opsonic index to *M. paratetragenus* stood at 1.35 on December 22nd, and had fallen on December 24th to 0.95, but in a subsequent observation taken on January 11th it had risen to 2.25. Treatment on these lines was continued until the middle of February.

Notes of Symptoms.

November 30th. Cough certainly better, nasal catarrh somewhat improved.

December 3rd. Post-nasal catarrh continues; cough much better, not so irritating; expectoration slight and looser. Has been to London in thick fog, and seems none the worse.



Case V.—Showing the results of the first two months of treatment. ——— Opsonic index to *M. catarrhalis*; ..... opsonic index to *M. paratetragenus*. A = Injection of 250 million stock *catarrhalis*; B of 250 million autogenous *catarrhalis*; and C of 500 million mixed vaccine.

December 12th. Cough very slight; post-nasal catarrh still present.

February 10th. Treatment discontinued. Patient is suffering from a detachment of retina, and has to stay in a darkened room for three weeks. "The cough has certainly been less troublesome this winter than previous winters."

These cases appear to me to prove:

1. That in cases of catarrh caused by *M. catarrhalis* there are marked fluctuations of the opsonic index.

2. That a fall in the opsonic index corresponds with an increase in severity, and a rise in the index with a decrease in severity of the symptoms. All the cases illustrate this, but it is naturally most marked in the more acute cases (III and IV).

3. That a suitable dose of vaccine given at an appropriate time will cause a rise of the opsonic index, which may be preceded by a negative phase of short duration (Case V).

4. That it is probable that similar fluctuations occur in the case of the *M. paratetragenus*, though my observations are at present very limited in number.

I have not succeeded in getting good cultures of *B. septus* and Friedländer's bacillus for opsonic work at present.

My results as far as they have gone appear to confirm those of R. W. Allen,[11] and it would therefore seem that there are good grounds for hoping that common colds may be successfully treated by vaccine therapy.

The subject is not of such minor importance as it might appear, for it seems certain that the mild affections called colds are closely allied, if not identical pathological processes, with more serious pulmonary affections. Every general practitioner must have observed the "common cold" extending down the trachea and causing laryngitis, and further into the larger and smaller bronchi causing bronchial catarrh, then bronchitis or bronchopneumonia. Is it not reasonable to suppose that this is a mere extension of the area of infection, the whole process being a general infection of the whole surface of the lining membranes of the respiratory tract?

Dr. Butler Harris has drawn my attention to a very interesting case in which pneumococci were found in the throat in a case of "common cold" for some weeks, but this was followed by a typical attack of lobar pneumonia.

The *Micrococcus catarrhalis* has been found in healthy noses and throats, in the lung in cases of acute pneumonia (Bernheim[17]), and in all the organs in a fatal case of "pneumo-typhus" (Petruschky[17]).

The *Micrococcus paratetragenus* has been found in the blood of a patient who died of pulmonary gangrene (Bezançon[16]); and I have found it in the pus from a very foul empyema.

The medicine of the future will concern itself more and more with prophylaxis, and my small researches will not have been in vain if they lead vaccine therapists to the consideration of the possibility of the prevention of severe diseases of the respiratory organs by paying very close attention to the mild infections of the nose and throat which precede them, and by studying all the methods by which such infections may be treated, whether by local treatment, general hygiene, or vaccine therapy, or by a combination of all these methods.

I wish to express my thanks to the Science Committee

TABLE I.—*Showing Prevailing Organisms and Symptoms of Cases in Series 1907–8.*

	M. paratetragenus.	M. catarrhalis.	B. septus.	B. Friedländer.	Staphylococci.	Streptococci.	B. Pfeiffer.	Pneumococci.	Symptoms.
1	+								Female, aged 7. Acute cold three days, caught in Paris. Laryngeal stridor; cough; sneezing; coryza; temperature 101°; stiff neck.
2	+	+	+		+	+			Female, aged 25. Sore throat fourteen days; backache; sneezing; cough.
3	+	+	+	+	+	+			Female, aged 8. Sore throat. Follicular tonsillitis.
4	+	+							Male, aged 7. Caught from Case 1. Malaise; temperature 102°; pain in left shoulder; no cough or coryza.
5	+	+	+					+	Female, aged 4. Seven days. Cough loose; coryza; sore throat; fauces red; earache left ear.
6	+	+	+		+		+		Male, aged 10. Cold in head one week; severe cough two days; pleurisy left side; temperature 103°, pulse 148.
7	+	+	+						Female, aged 19. Laryngitis; cough forty-eight hours; sore throat.
8	+	+			+				Male, aged 55. Coryza; headache; cough three days.
9	+	+	+		+		+		Male, aged 30. Cold in head; cough three days; stiff neck; pains in shins; temperature 98°.
10	+	+	+		+	+	+		Female, aged 30. Cold in head; headache; cough; epistaxis.
11	+	+	+		+				Female, aged 35. Cold in head; sore throat ten hours.
12	+	+	+	+					Female, aged 25. Sore throat and cough five days; headache; pains in arms; stiff neck.
13	+	+	+	+			+	+	Female, aged 48. Very mild bronchitis seven days.
14	+	+	+		+	+			Male, aged 32. Coryza three weeks; cough and sore throat three days.
	14	13	11	3	8	4	4	2	

TABLE II.—*Showing Prevailing Organisms and Symptoms of Cases in Series 1908–9.*

	M. paratetragenus.	M. catarrhalis.	B. septus.	B. Friedländer.	Staphylococci.	Streptococci.	B. Pfeiffer.	Pneumococci.	Symptoms.
1	+								Irritable cough one week.
2									Chronic nasal catarrh; clear discharge every morning.
3		+							Acute cold, on chronic six months.
4	+								Acute cold and cough three days.
5					+				Chronic nasal catarrh.
6	+		+						Acute sore throat twenty-four hours; yellow exudation on left tonsil; muscular pains.
7			+						Sore throat, cough, occurring during convalescence from abdominal operation. CHCl$_3$.
8			+		+				"Clergyman's sore throat" four months; laryngitis; cough; slight nasal obstruction; left otitis media.
9		+					+(?)		Acute coryza twenty-four hours; headache, malaise.
10	+	+	+			+	+		Acute coryza occurring in Case 8.
11		+	+			+			Acute cold seven days; sore throat, malaise, muscular pains; no cough.
12		+	+			+			Acute cold five days.
13	+	+	+						Sore throat three days; "chest feels stuffy"; no physical signs.
14	+		+				+(?)		Acute sore throat three days; fauces red; cough; no coryza.
15	+	+	+(?)						"Influenza"; temperature 103°; severe headache and muscular pains; sore throat; right otitis media.
16	+	+							Acute cold twenty-four hours.
17	+		+				+(?)		Acute cold.
18									Acute cold; negative bacteriological examination.
19									Acute cold; nil; had been using atomizer.
20	+	+			+				"Influenza" three days; temperature 102.4°; headache; muscular pains; cough.
21		+	+						Coryza; headache one week; suffers from chronic nasal catarrh.
22	+	+	+		+				Cold and cough fourteen days.
23	+	+	+						Chronic cold.
24	+	+	+				+(?)		Winter cough fifteen years; acute exacerbations.
25	+	+	+						Acute cold.
26		+	+	+(?)	+	+			Acute exacerbation in Case 24.
27	+						+(?)	+	Severe nasal catarrh three months; profuse coryza; acute exacerbation twenty-four hours.
28	+		+						Same patient as Case 20. Coryza; headache; cough four days.
29	+		+		+				Follicular tonsillitis; temperature 102.4°.
30		+	+	+		+			Same patient as Case 24; slight increase of nasal catarrh.
31	+	+	+	+		+			Acute coryza on chronic; slight cough.
32	+	+				+			Acute cold four days.
33	+	+	+		+				Coryza five days; sore throat; temperature 100°.
34	+		+						Acute exacerbation in Case 31; sneezing, sore throat, backache; some cough.
35	+	+	+	+	+				Chronic nasal catarrh.
36					+	+			Follicular tonsillitis.
37		+			+	+			Chronic nasal catarrh; pus in left nostril; irritable cough all winter for twelve years.
38	+		+			+			Acute exacerbation in Case 31.
39	+			+		+			Chronic cold 6 years.
40	+		+					+	Follicular tonsillitis; painful; temperature 102°.
	25	21	25	5	10	11	6	2	

of the British Medical Association for grants of £2 and £10 towards the expenses of this research, and to Mr. Edmund Spitta for his kindness in taking the high power photomicrographs which illustrate the text.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

RUPTURE OF BOTH QUADRICEPS EXTENSOR CRURIS TENDONS.

Towards the end of January, 1909, I was sent for to see Mr. W., aged 64, who gave me the following history: On December 23rd, 1908, he jumped from a cask to the ground, a distance of 3 or 4 ft. He landed on his feet, but his legs seemed to give under him, and "he fell in a heap." He noticed that he could not extend his right leg, but not thinking there was much the matter, tried to walk to his house a few yards away, after he had been helped up by some of his workmen. He managed to get along for 20 or 30 yards, when he felt his legs double up under him, and he fell again. After this he felt that he could walk no more alone, and was assisted home. He went to bed and remained there till I saw him, thinking that by degrees he would get back his strength. He told me that he had pain in both legs, below the knees, and was too weak to stand or walk alone. On examination, there was nothing to be seen below the knees, beyond some extravasated blood below the outer side of the right knee. Above the patella, however, on each side, was a well marked oval hollow, extending upwards 2 or 3 in. He was able to raise either leg from the bed, with some difficulty, but could not stand alone. It was quite obvious that he had ruptured both quadriceps extensor tendons. I advised him to have the tendons sutured, to which he agreed.

On February 11th Dr. Day kindly gave him an anaesthetic, whilst Dr. Renny assisted me in the operations, which were precisely similar in both legs. A vertical incision was made, long enough to expose the upper end of the patella and the lower end of the retracted tendon, which had given way quite close to its insertion into the bone. The ruptured tendon was then with very considerable difficulty brought down to its original position, some small cross cuts through the muscular tissue above the tendon being made to facilitate matters. It was held in position by means of two stout silk ligatures, passed through holes drilled in the patella, and then passed twice, backwards and forwards, through the tendon, in such a way as to get a firm grip. Several thick catgut sutures were also passed between the tendon and the fibrous structures, in front of and at the side of the patella. I found it necessary to use silk, as catgut would not stand the strain, even when doubled. In both legs the knee-joint was freely opened.

Recovery was quite uneventful, though for several days the temperature ranged as high as 100° to 101°, probably on account of absorption from fluid effused into the joints. I kept the limbs for about five weeks in back splints, which were then removed, and gradually increasing passive, and then active, movements were begun. Before many more weeks were over he could stand alone and walk fairly well across the room, and now, September 20th, 1909, he can walk about again as well as ever. For a long time after he began to try to walk he was troubled with very considerable oedema of the legs, and though this has not yet disappeared it is much better, and getting less and less.

Although rupture of one quadriceps extensor tendon is not very uncommon, I have not seen or heard of a case where both snapped, and Mr. Openshaw, who was in Colchester at the time and saw the patient, tells me that he also has not met with a similar case, so that I think it is deserving of being put on record.

Ed. Chichester, M.B.Lond.,
Honorary Surgeon, Essex County Hospital, Colchester.

THE SEARCH FOR PERFORATING ULCER OF THE STOMACH.

In the Epitome of October 23rd, paragraph No. 209, appears an interesting abstract of an article by Ewald, of Vienna, on this subject, its object being to indicate an area 1 cm. to 2 cm. above or below the pyloric ring, in which it is asserted the perforation is almost always situated. My purpose in writing is not to express any opinion on this statement, but to call attention to a guide to the perforation which I have found almost invariably present when operating.

I always look for a vivid scarlet injection of some portion of the peritoneum; this has its source and centre in the area round the perforation. When the abdomen is opened and the stomach or duodenum exposed, a red streak can usually be seen, which becomes more intense in one direction; if this is followed the ulcer is found. In other instances the incision exposes the inflamed area towards its centre. The next step is to expose the portion which is most intensely red. This immediately surrounds the lesion. The colouring of the peritoneum is quite distinctive; it is bright red, with patches of lymph on the surface. It is swollen and pulpy looking.

The guidance is so good that I have closed a perforation which I never saw. The operation was done under unfavourable circumstances. It was in a small farm-house; everything had to be done by two of us. Our light was from three or four tallow candles. All efforts failed to bring the perforation into sight; it was somewhere near the cardiac end of the stomach, but, relying on this sign, the area of greatest intensity of inflammation was folded in and sutured. This closure held and the patient recovered.

The extent and intensity of this appearance vary in accordance with the length of time which has intervened between the occurrence of perforation and the operation, and probably also in proportion to the irritating qualities of the effused stomach contents, but whatever its amount, its centre is the ulcer, and it diminishes in degree from it outwards. There is an obvious advantage in being able to use for guidance an appearance which has its source in, and which is relative to, the individual local condition under consideration.

Carlisle. Roderick Maclaren.

"NASTIN" IN THE TREATMENT OF LEPROSY.

My attention was called to "nastin"* only a year ago, prior to my taking charge of the E. F. Allbless Leper Home at Trombay. I commenced to use it on three lepers on August 14th, 1908.

Case I, Mathew X. Rodriques, a native Christian, aged 29, from Africa, had suffered from mixed leprosy for the last eleven years. The skin of the whole face, chin, and ears was enormously thickened, and there were clusters of tubercles on the body, face, arms, forearms, fingers, legs, and feet. There was discoloration of the skin of both thighs, scaly dark patches here and there on the feet, anaesthesia in the fingers of the left hand and from the knee downwards to the tips of the toes of both lower extremities. The nails of the toes were wasted away. In conformity with Professor Deycke's directions, the injections were weekly on and after August 14th, 1908, the patient having forty-four injections in all. His condition to-day (September 24th, 1909) is as follows: Sensation has returned completely in fingers, knees, and tips of toes. The tubercles on the body, legs, feet, and hands have subsided, but not those of the face, although the thickening here shows decided symptoms of going down. Ulcerations have healed, discolorations and scaly patches have faded, and the nodules softened. The skin is much moister than before.

Cases II and III are instances of tuberculous and mixed varieties respectively; they have had the same number of injections as Case I, and show decided improvement and feel generally better than they did before the commencement of nastin. I have treated a few other cases in the hospital, side by side with the above three, with arsenic, iodides, salol, Chaulmoogra, etc., but can hardly vouch for the utility of these drugs either in curing leprosy or arresting its progress. Further, iodides—and Chaulmoogra in particular—have caused pronounced general and local reaction. Considering that leprosy is a disease requiring a steady persevering course of treatment, extending over months, possibly years, it is but fair that Professor Deycke's nastin should be given a wider and more extensive trial.

Dr. D. A. D. Monte, M.D., L.R.C.P.Lond., J.P., of Bandra, Bombay, Honorary Secretary, Treasurer, and Consulting Physician to this home, saw my cases quite recently, and agrees with this my report.

F. Raschid,
Medical Officer in Charge, E. F. Allbless Leper Home, Trombay.

* Described by Professor Deycke in the British Medical Journal, vol. i, 1908, p. 802.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

GYMPIE HOSPITAL, QUEENSLAND.

CASES OF INJURY AND DISEASE OF THE EYE.

(Reported by W. Sidney Sweet, B.Sc., M.B., B.S.Lond., M.R.C.S.Eng., Medical Superintendent and Resident Surgeon.)

Injuries.

The following cases should be of interest to ophthalmic surgeons:

Case I.

Albert S., aged 28, was chopping a piece of hard-wood, when the wood flew up and struck him in the left eye. He was seen next day. There was a wound in the left upper eyelid and the tarsus was cut through, with such marked chemosis that it was difficult to separate the lids sufficiently to see the eyeball. The cornea was hazy and the pupil large and irregular, so that only a narrow fringe of iris could be seen. The sphincter pupillae was torn through on the outer side and there were small extravasations of blood above and below. On optical examination there was complete absence of retinal reflex; light perception only. Tension of the globe same as uninjured eye. The subsequent course of this case was as follows: Chemosis soon cleared up, and, except for some irregularity of the pupil, the eye on casual examination regained its former appearance, *but no retinal reflex returned nor any improvement of sight.*

Case II.

Thomas F., aged 47, was mining underground when a fall of earth took place, and he was injured about the face and head. When seen an hour later both eyes were closed by swelling of lids. The nose was swollen, nasal bones fractured, blood oozing from nostrils, a fracture of upper jaw and hard palate centrally with ½ in. separation and some mobility, and a transverse fracture just in front of second molars, with displacement downwards of the posterior fragment, with the second and third molars on each side depressed, so that when the jaw was closed the teeth in front of this would not meet. The eyes could not be examined on account of the swelling until the second day after the injury, when it was found that there was impairment of vision in the left eye, so that he could not count fingers properly. The outer part of the field was more distinct than the inner. The pupils were equal, and the left reacted to light directly and reflexly. Ocular tension in both eyes equal. On ophthalmoscopic examination the retinal reflex was uneven, coming from the upper portion only. Below was a dark mass, which appeared to be a blood extravasation, just behind the lens. On the nasal side there was a patch of red reflection, and the vessels were congested. The optic disc could not be made out with distinctness, its edge was ill defined; there was no pain. Two days later the upper part of the retinal reflex was of a greyish-white, except the patch mentioned on the nasal side, which was now more defined and very deeply congested. The vessels coming into the disc, which was a little more defined, were oblique and parallel. Light perception only. A few days later no retinal reflex could be obtained, and it never returned. Two months later a casual examination of the eye revealed no apparent difference from its fellow. Pupils equal, and reacting reflexly to light, but there was no return of vision or retinal reflex. The left eye did not react to light directly, but dilated when the healthy eye was covered and contracted when the latter was uncovered.

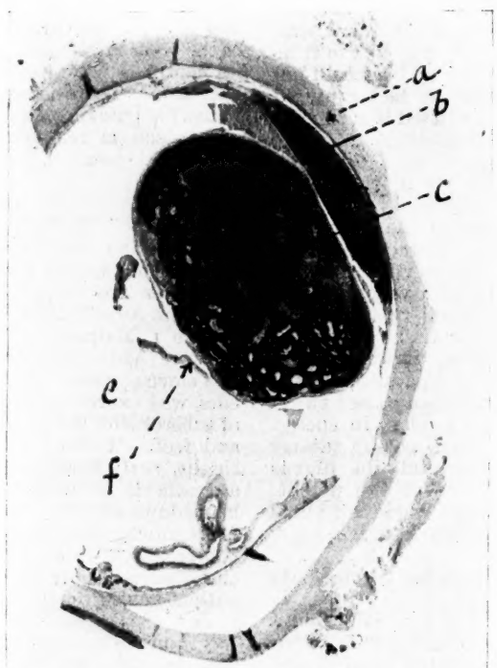


Fig. 1.—Microscopical section of melanotic sarcoma of the globe, cut *in situ*. The tumour, *c*, is seen as a sessile or slightly pedunculated tumour springing from and involving the choroid coat, *b*. The line of division between *b* and *c* is an artificial one produced in section cutting; *a* is the sclerotic, *e* the vitreous, and *f* a part of the retina pushed forward by the tumour, which pressed the lens and iris forwards, annihilating the anterior chamber and producing secondary glaucoma. Within the ring shown by the dotted line there were dense deposits of melanin, which was more diffuse and scattered in other parts of the section.

These two cases are interesting examples of injuries to the globe, with probable haemorrhage into the media, and loss of sight without disorganization. Both cases were seen by competent ophthalmic surgeons, who were at a loss to explain their exact nature. The pupil reaction in Case II implies injury to optic fibres without any impairment of the reflex path through the third nerve and Meynert's commissure, and is suggestive of injury to the optic nerve in its foramen and perhaps a crack fracture. This point, which is of considerable interest, is also illustrated in the next case.

Case III.

William H., aged 42, fell from a bicycle on to the right side of his head. He lost consciousness for a few minutes, and since has been troubled with bad headaches. He came for advice six weeks later, and a scar was then visible in the right temporal region, extending towards the orbit. Near and distant vision were both much impaired in the right eye. Test type normally read at 30 metres could just be deciphered at 1 metre distance. The right pupil reacted very slightly to light, and not at all to accommodation. On covering the left eye the right pupil dilated, and on exposing the former the latter contracted, contracting still further to perfect equality when both eyes were uncovered. On ophthalmoscopic examination after homatropine, the retinal reflex was normal and the media clear. No haemorrhages, vessels normal, disc pale. Patient was kept in hospital eight days and his nervous system carefully examined, but no abnormality found, except plus knee-jerks. A dark room and caffeine relieved his headaches. He was seen again several weeks later, but without any change in the physical signs.

The writer looked after a similar case in the Middlesex Hospital a few years ago, under the charge of Mr. Lang. An old woman walking home from church with an umbrella up came in contact with a cab and fell down, striking the left orbital margin in her fall. There was only a slight abrasion, but complete loss of sight in the same eye, the pupil only reacting reflexly through the sound eye. The sight was partially restored. The diagnosis was injury to optic nerve in its foramen.

Melanotic Tumours.

The following case is very interesting, because it illustrates well the difficulties of diagnosis when there is more than one lesion present at the same time.

Case I.—*Melanotic Sarcoma of the Globe.*

Anders P., aged 47, was taken ill a week before he was seen with headache and pains all over. He had had neuralgia on the right side of the face, and had been delirious for the last night or two. During the present illness his right eye had given him pain, but not before. He thought it was the neuralgia affecting the eye. The sight of this eye had been affected for about three years, and more than a year ago he noticed, when he shut his other eye to shoot, that he was quite blind in the right eye. There was nothing else in his past history that threw any light on his condition. On examination his temperature was 104.2°, pulse 120, and respirations 26. He was dull and heavy, but the tongue was clean, and a detailed examination of lungs, heart, abdomen, and nervous system, etc., elicited no further information of value. There was a zone of congestion in the ocular conjunctiva; the pupil was irregular, dilated, and fixed, the outer part of the iris being more contracted, producing a little notch in the sphincter pupillae. The ocular tension was slightly raised as compared with the sound eye. There was some discoloration of the iris at its free margin, and this was pushed right up against the cornea, the anterior chamber being practically non-existent. Through the pupil a milky opacity was visible which, on focussing, showed branching streaks. Cornea sensitive and clear; tenderness on palpating globe.

Next day his temperature came down to normal, and he sweated very profusely, but it rapidly rose again to 102.6°, and he had a rigor. He became very depressed and then very heavy, almost comatose, and passed both motions and urine in bed. The temperature fell to 97°. A careful physical examination was made, but no new sign presented itself except tenderness on pressure in the right hypochondrium. He then developed delusions, regarded his food with suspicion, said there was a conspiracy to kill him, and constantly reiterated that he was mad. The temperature rose to 99°, the pulse remaining between 70 and 80. A consultation was held, and various possibilities canvassed. The sweating, mental symptoms, and irregular temperature suggested a focus of inflammation and pus, and, if the lesion were a single one, this might be expected to be in the neighbourhood of the sella turcica. On the other hand, there was neither proptosis nor vomiting, and, moreover, there was an influenza epidemic in the neighbourhood, and his initial symptoms had been headache and pains in the limbs, and his eye had not troubled him at the beginning, so that a dual lesion had to be considered with remote effects upon the eye. The following day the patient became more rational, and he was quite sensible on the next. His temperature remained normal and his pulse became slow (60). These facts and the subsequent course of the case favoured the alternative diagnosis, which also was the original one. The tenderness and congestion of the right eyeball diminished, and the patient became convalescent. Two weeks after his admission the right eye was enucleated. The globe was then frozen by ether evaporation, and a sagittal section made. It was then seen that there was a spherical tumour in the outer half of the vitreous, exactly 10 millimetres (about two-fifths of an inch) in diameter, and pressing against the lens. The tumour was external to the retina, and appeared to come from the choroid. It extended as far inwards as the middle line, and did not pass beyond the globe. The base of the tumour was rather more than half its diameter, and the sclerotic over it appeared to be normal, although Tenon's capsule, or the fascial extension from the external rectus, was a little thicker at that point. The right upper wisdom tooth, which had a cavity, was removed at the operation. This probably accounted for his neuralgia. Sections of the tumour (*in situ*) were cut and stained and examined by Dr. Love, the Government pathologist. (See Fig. 1.) It was reported to be a melanotic sarcoma.

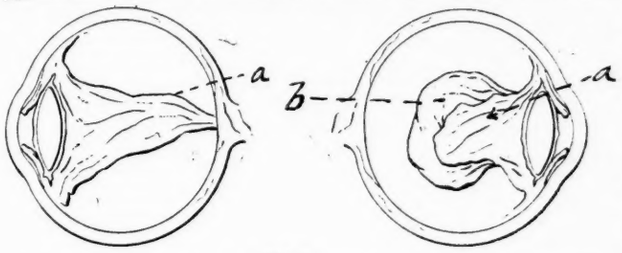


Fig. 2.

Left or nasal half. *a*, Prolapsed retina. Right half of globe. *b*, Tumour, 10 mm. in diameter, pushing retina forwards.

The patient made an uninterrupted recovery, and there has been no recurrence up to the present. An interesting feature in this case is the slowness of the growth and the absence of symptoms other than failing sight.

CASE II.—*Melanotic Tumour of the Liver.*

Johnson N., aged 47, a goldminer, had not been in good health for six months, since he first noticed a painful lump behind his right shoulder. This, however, had not been painful lately. Two weeks ago he had to give up work and seek medical advice for pain and "soreness" in the upper part of the abdomen and right flank. In the past he had had fever and ague thirty-five years ago, but there was no history of syphilis or alcohol. On examination he was spare but not emaciated, he was pinched and anxious-looking, and his breath very offensive, but tongue moist and fairly clean. There was a very hard lump about the size of a walnut behind and below the right shoulder, not much below the skin and not attached to it, and a similar lump in the right axilla. The upper part of the abdomen looked full and the lower border of the liver could be felt almost on a level with the umbilicus in the mammary line and shelving across to the tip of the ninth left costal cartilage. The surface was smooth. The liver dullness commenced in the fourth space and became absolute at the upper border of the sixth rib in the mammary line. The flanks were slightly bulged, the usual horse-shoe shaped area of dullness on percussing the abdomen, fluctuation from flank to flank and shifting dullness. Splenic area not enlarged. Heart and lungs normal. Urine very dark, a brownish colour with deposit of urates. The colour darkened on exposure to the air and on the addition of acids, and got lighter on the addition of alkalis. It changed the colour of Fehling's solution to a brownish hue, but there was no precipitation of cuprous oxide. There was no albumen. Microscopical examination showed pigment in small particles, black in some parts, brownish in others. Some granules were free, others in small epithelial cells. No casts or blood were present. Chemical tests for melanin were then applied and its presence established. The temperature was 99.6° and the pulse 96. There was no swelling of the feet. A diagnosis of melanotic tumour of the liver with ascites was made.

The subsequent course of the case was rapid. He became restless and light headed, and the abdomen tympanitic and slightly distended with increase of fluid. Petechiae appeared in cheeks and abdomen, and the tongue became raw and beef-like and very dry and small. The liver edge could now be felt to be both hard and sharp. Retention of urine followed, and the pulse became weak and compressible. He answered questions rationally, but wandered at times. The temperature became normal, then subnormal, the retention continued, and he died on the tenth day after admission.

On *post-mortem* examination there was free yellow, clear fluid in the abdomen, peritoneum normal except a few petechiae, omentum injected slightly in parts. *Liver*, much enlarged, surface slightly roughened, very firm and hard. Dark patches of brown pigment all over the surface, with paler areas between, and here and there petechiae in the capsule. On section it was tough, and had the appearance of a coarse granite, the dark areas being about the size of the top of the finger, brown in parts, quite black in others, and separated by pale yellowish, opaque-looking areas. Lobulation indistinct. *Spleen*, somewhat enlarged, otherwise normal. *Kidneys*, normal. *Lungs*, slight emphysema and small shotty growths near lower margins. *Heart*, muscle soft and somewhat pale. Valves normal. One small shotty growth in visceral pericardium over the right ventricle. The tumour behind the right shoulder was just deep to the deep fascia, and had the appearance of an enlarged lymphatic gland. On section it was deeply pigmented.

The gland and a portion of the liver were sent to the Government pathologist, who made a microscopical examination and reported: *Liver*, melanotic sarcoma, with carcinomatous affinities. *Gland*, melanotic sarcoma. (See Fig. 3.)

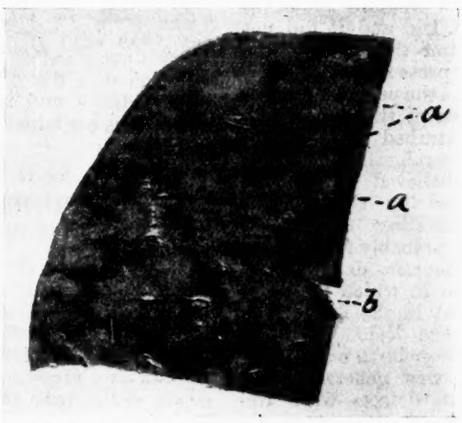


Fig. 3.—Microscopical section of liver (enlarged about four times). The areas marked *a* are melanotic areas containing particles of melanin and broken-down liver cells. At *b* the liver tissue is almost normal. This has a very different appearance to the liver as seen *post mortem*, where the affected areas appeared very dark, almost black, and the whole liver resembled coarse granite, as described in the text. A band of thickly deposited melanin separates these areas, *a*, from the more normal tissue, although deposits of melanin are also seen dotted about throughout the section.

The interesting points about this case were (1) its rapidity (the patient performed his daily work up to within about two weeks of his death), and (2) the absence of any apparent primary growth in the skin, choroid, etc. Also it is to be noted that the infected glands were on the right side—that is, the same side as the liver. The growth was disseminated equally throughout the liver, and would appear to have been primarily in the liver, the other disseminations being apparently secondary. There was no sign of any skin lesion in the area drained by the infected glands, although it is stated by some pathologists that in cases where it is apparently primary in the liver, if the skin had been searched, small pigmented moles would probably be found.

THE firm of Ernst Leitz, 9, Oxford Street, London, W., has issued a new edition of its catalogue of microscopes containing several new models; and also a catalogue of microscopical accessories, including some new appliances.

ACCORDING to the German *Universitätskalender* recently issued, the numbers of students of medicine in the universities of Germany during the last summer session were as follows: Munich, 1,696; Berlin, 1,162; Freiburg, 794; Leipzig, 574; Heidelberg, 553; Kiel, 490; Würzburg, 490; Bonn, 370; Breslau, 349; Strassburg, 318; Marburg, 313; Königsberg, 304; Tübingen, 301; Jena, 287; Erlangen, 260; Gottingen, 254; Halle, 234; Greifswald, 213; Giessen, 209; Munster, 166; Rostock, 165.

Reports of Societies.

MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

Friday, October 22nd, 1909.

Professor ROBERT MUIR, President, in the Chair.

DR. J. S. MCKENDRICK, in a paper on *Reflexes in cardiac disease*, described the case of a man aged 83, who for fully a year before his death had attacks of tachycardia and paroxysmal dyspnoea associated with profuse salivation. His lungs and abdominal organs were sound; the urine contained no albumen; there was no nervous element in the case. The heart as a rule was normal in size, and there was no valvular disease; but during the period of paroxysmal tachycardia it perceptibly enlarged to the left side, and ventricular systolic mitral murmur could be heard. By the next day the heart had returned to its normal size and all trace of the murmur had gone. The sphygmogram during the quiescent period showed ordinary cardiac arrhythmia with frequent extrasystole of the ventricle, and the rate varied from 65 to 75 beats in the minute. During the tachycardial state the pulse was regular, of low tension, and showed well-marked "pulsus alternans," the rate being often 150 beats to the minute. During each of these seizures, which lasted from ten minutes to several hours, there was a profuse salivary discharge. The blood pressure was never high, averaging from 125 to 135 mm. Hg, and it did not materially vary either during or after the tachycardial seizure. The tendency to low blood pressure, the dilatation of the heart during the attack, and the pulsus alternans all went to prove that the causation of the attack was probably myocardial and due to disturbed contractility. There was no anginoid pain or hyperalgesia of skin or muscle. The salivary flow was believed to be due to a cardiac reflex of the vagus to the nucleus of the fifth nerve, thereby stimulating its lingual branch. The patient died suddenly, probably from vagus inhibition, and there was no *post-mortem* examination. Dr. J. M. COWAN, in reporting a case in which the bruit de Roger was present, pointed out that in the majority of cases of congenital heart disease the lesions were so extensive that death ensued shortly after birth or in early childhood. During life cyanosis was generally well marked, and often obtrusive. The defects were frequently multiple, and accurate diagnosis was usually possible only on *post-mortem* examination. Cases, however, occurred in which the defect was single, unaccompanied by cyanosis, not incompatible with average health, and associated with distinctive physical signs. Such a defect was the persistence of a communication between the ventricles—a condition described by Henri Roger thirty years ago, and present in a case which the author proceeded to describe. The apex impulse was diffuse but not well sustained, and was palpable in the fourth and fifth left interspaces. A long, fairly harsh systolic murmur was audible all over the cardiac area. It was heard best down the left margin and at the foot of the sternum, was fairly well heard at the apex, and was conducted to the axilla and the left scapular angle. It was not conducted into the carotids or towards the left shoulder. The second aortic sound was clear and distinct, but no second sound was heard on auscultation over the ventricle, nor at the xiphoid cartilage. The murmur thus closely corresponded to the original description of it by Roger (Académie de Médecine, 1879). Drs. ROWAN and STODDART BARR reported upon a further investigation into the frequency and significance of *Optic neuritis* and other vascular changes in the retinae of patients suffering from purulent disease of the middle ear. Dr. A. G. FAULDS, in a paper on the *Operative treatment of hernia* in boys, recommended, as an alternative to the usual open operation for radical cure, the following procedure: (1) Reduction of the hernia; (2) insertion of the operator's left forefinger into the canal by invagination of the scrotum; (3) transfixion of both pillars of the ring by one or two ligatures passed subcutaneously; (4) occlusion of the ring by the drawing tight and tying of these ligatures. Gratifying results were claimed for the operation, which, however, had not proved invariably successful.

LIVERPOOL MEDICAL INSTITUTION.

Thursday, October 21st, 1909.

Dr. T. HOLLAND in the Chair.

MR. FRANK JEANS, in a paper on *Perforative peritonitis*, discussed 10 consecutive cases on which he had operated. There were 2 cases of perforated duodenal ulcer and 8 cases of general peritonitis due to perforated or gangrenous appendicitis. The series included 4 children of 15 years or under. There were 2 deaths, both being amongst the appendix cases. One child of 11 died of pneumonia on the fourth day, the *post-mortem* examination showing a clean peritoneum, although the symptoms had dated from four days before the operation. In one case the patient was four and a half months pregnant, but recovered without abortion. One man died on the tenth day, after a small secondary abscess had been opened. In the pregnant case no suprapubic tube could be used to drain the pelvis. The author mentioned a sign which had been present in two of the cases, and which he called "the abdomen moving the wrong way," and attached some importance to it as an early sign of general peritonitis. All the cases were treated with slight modifications of the Murphy method, and the author suggested that possibly the continuous administration of salines might act as a vaccine in appendicitis cases by the absorption of solutions of the products of the *B. coli*, but he left this problem to the vaccinators and the immunizators. Drs. STOOKES and E. E. GLYNN related a case of a woman, aged 28, who, in her fifth pregnancy, had *Accidental haemorrhage* for eight days at the sixth month, and died two days later with symptoms of uraemia. On *post-mortem* examination numerous small anaemic infarctions were found in the cortex of the kidneys. Cultures made from kidneys and spleen showed *B. proteus vulgaris*. The uterus contained *Staphylococcus aureus*.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

Friday, October 22nd, 1909.

Dr. J. B. HELLIER, President, in the Chair.

Dr. HELLIER having delivered a presidential address dealing with the medical student and his curriculum, from a teacher's point of view, Mr. W. ASTEN read notes on the treatment of *Inebriety* by the hypodermic injection of atropin and strychnine twice or thrice daily for a month or six weeks, with attention to general hygienic conditions, and tonics by the mouth. At the commencement of the treatment patients were told that its success depended on their regular attendance at the surgery for injections. He described seven cases, all of them presenting marked degrees of alcoholism, which had been treated in this way. In five treatment was commenced in September 1905, July 1907, March 1908 (two cases), and July 1909 respectively. These cases had remained cured up to date. In the two other cases relapses had occurred after two months and four years respectively. The following were among the exhibits:—Mr. H. LITTLEWOOD: (1) Six inches of sigmoid flexure thickened from chronic diverticulitis which had led to fistulous openings between the colon, bladder, and the abdominal wall. The specimen was from a woman aged 65, who had for twenty years passed faeces and flatus per urethram, and faeces and urine through the abdominal wound. (2) Gall stones in the appendix, and in an appendical abscess from a man aged 52 years, who had several attacks of gall stones and some attacks of appendicitis. Mr. G. CONSTABLE HAYES: Two cases of primary carcinoma of the middle ear, one in a man aged 47, the other in a woman aged 35; the growth in each case was squamous, and preceded by chronic suppuration. Dr. WARDROP GRIFFITH: Two cases of disseminated sclerosis in young women. In one case, when the patient was seen two years previously, she could not walk without assistance. In twelve months she improved so much that she was able to play hockey, and was regarded by her friends as cured. The symptoms, however, gradually returned, confirming the original diagnosis. Mr. MICHAEL TEALE and Dr. E. F. TREVELYAN: An unusual form of keratitis in a child, which had produced extreme photophobia for several years. It was finally treated by tuberculin. Dr. MAXWELL TELLING: A case of hypertrophic cirrhosis of the liver in a child; there was marked clubbing of the fingers and toes.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

Tuesday, October 19th, 1909.

Dr. W. Ward-Smith, President, in the Chair.

Presidential Address.

Dr. Ward-Smith, in his presidential address, after reviewing the general treatment of rickets, passed on to the consideration of *Knock-knee, bowlegs, and coxa vara.* The treatment of these conditions depended upon the age of the patient, the extent of the deformity, and the circumstances and surroundings. No operative procedure should be adopted until the active general symptoms of rickets had subsided. There was a strong natural tendency to correction. Enormous benefit could be derived from proper local non-operative treatment while the bones were soft. In respect of treatment, he said that in very youthful cases rest and recumbency, with daily massage and passive movements, usually sufficed. In more advanced cases in knock-knee a light wooden external splint should be applied extending from the upper part of the thigh to 3 in. below the sole of the foot, and the knee drawn firmly to the splint by a wide strap; t should be daily removed for massage and passive movements. In bow-legs the splint is placed on the inner side of the leg. In older children, between the ages of 2 and 6, some form of ambulant splint should be used. When the patient had passed the age of 6 osteotomy was indicated. With regard to coxa vara, it was without doubt due to ossification as the result of rickets permitting the body weight to bend the neck of the femur. It might be distinguished from morbus coxae by the following points: The gait was usually erect, *not* with the body bent forward as in morbus coxae; the pain was in the groin, not referred to the thigh or knee; no "shooting pains" at night; there was flexion and external rotation, as against adduction and internal rotation in hip disease; there was absence of involuntary muscular spasm, so frequent in hip disease. The *x* rays would always clear up any doubtful case.

ROYAL SOCIETY OF MEDICINE.

Medical Section.

Tuesday, October 26th, 1909.

Dr. J. Mitchell Bruce, President, in the Chair.

Oxaluria.

Dr. Robert Maguire, in a paper on oxaluria and its treatment, said that urinary showers of crystalline calcium oxalate alternating with uric acid were frequent, without other symptoms, but must be caused by a disordered metabolism. Greater deposits of the oxalate could only occur when there was great excess of oxalic acid in the urine. Such copious deposit was frequently associated with nervous and dyspeptic symptoms, the whole grouped as oxaluria, the symptoms being usually supposed to be caused by the same general disorder which produced the oxalate deposit. Sometimes, at least, the first item was great nervous strain, leading to a special dyspepsia, and because of the latter there occurred excessive production and deposit from the urine of calcium oxalate. In a case detailed an attempt had been made to trace the connexion between the dyspepsia and the oxaluria, the estimation of the oxalic acid in the urine being made by Neubauer's method, and in doing so it was noted that in the estimation an error of experiment had to be allowed for, in that the acid phosphate of sodium of the urine held up in solution a certain amount of calcium oxalate. It seemed to Dr. Maguire that, by greatly increasing this salt in the urine, some of the stone might be dissolved and its passage facilitated. It was first ascertained by analysis of the phosphates in the urine that the salt given by the mouth actually appeared as such in the urine. Therefore 2 oz. per diem of NaH_2PO_4 were administered in 100 oz. of distilled water, and in six weeks all symptoms of stone had disappeared, and yet no calculus was passed. It was claimed that the stone was dissolved. The experiment was then repeated *in vitro*. By means of an apparatus devised, between 45 and 50 oz. of fluid at blood heat could be passed continuously over a calculus in twenty-four hours, imitating the passage of urine through one ureter. An imitation of the drugged urine and in the amount which would probably pass through one ureter was by means of the apparatus dripped over an oxalate stone which had been removed from the bladder, and which weighed when dried 0.48 gram. After six weeks the remainder would easily have passed the urinary passages unperceived. It weighed 0 08 gram, and, though afterwards diminished in size and weight by treatment with HCl, consisted mainly of a uric acid nucleus. A uric acid calculus was treated in the same way by means of similar salts of potassium (as being more favourable for the solution of uric acid), but no change of importance was observed. It was suggested not only that oxalate of lime calculus should be treated by this solvent method, but that in cases of simple oxalate of lime deposit without stone formation, the acid phosphate of sodium should be given from time to time in order to prevent concretion. Dr. R. Hutchison was sceptical as to an oxaluric dyspepsia or symptom complex. The clinical effects of oxalates were purely mechanical. He had found that acid phosphate of soda was by far the most potent means of increasing the acidity of the urine, and the greater its acidity the greater, no doubt, was the solvent action on calcium oxalate. But this artificial increase of the acidity favoured the deposition of uric acid. A simultaneous effect in diminishing the alkalinity of the blood was not without disadvantage. Hence the method might not prove acceptable in practical medicine. Dr. Beckett-Overy also thought the importance of oxalates in the urine was due to their mechanical effects, and believed he had found that the citrates given by the mouth exerted a solvent action on the oxalates in the urine. After remarks by Dr. J. Anderson and Dr. Nestor Tirard, Dr. Maguire replied.

Section of Diseases in Children.

Friday, October 22nd, 1909.

Dr. G. A. Sutherland in the Chair.

The following were among the cases demonstrated: Dr. A. Manuel: Two cases of *Anterior poliomyelitis involving the four limbs.* The first was a child, aged 1 year 8 months, in whom the condition developed suddenly after a slight injury. The child's temperature when brought to the hospital was 100° F., and all four limbs were paralysed. Some improvement had occurred in the arms since the child was admitted. The second case was a child, aged 1, in whom the condition resulted from a sudden illness on August 15th. Considerable recovery in the arms had already occurred, but there was still complete paralysis of all the extensors of the foot and leg. Mr. Ralph Thompson: A case of *Extra-capsular fracture of the neck of the femur*, in a boy aged 6. The injury had resulted from a fall. The diagnosis was at first very obscure, but a skiagram revealed the true nature of the injury. The case had been treated by extension and Thomas's hip splint. Mr. Mummery said that this injury was very seldom diagnosed in children, but some of the cases of obscure deformity of the hip-joint were very possibly due to a similar injury. Dr. Higgs (for Mr. Howell Evans): Case of *Congenital hemidystrophy* in a child aged 1 year 10 months. When only a month old it was noticed that the left side of the tongue was larger than the right, and later that there was asymmetry of the abdomen. When shown, a marked difference could be observed between the sizes of the two sides of the body. The condition in this case was progressive. Dr. Parkes Weber regarded the case as one of hemihypertrophy of muscular origin. Mr. Lockhart Mummery reminded the Section of a similar case shown by him two years previously. The condition was likely to lead to great deformity. Dr. F. W. Higgs: An appendix infiltrated with *Lympho-sarcoma.* The kidneys also showed diffuse infiltration with lympho-sarcoma cells. Mr. Ivor Back: A specimen removed from a girl aged 8 by operation, the child recovering. It showed an appendix completely involuted into the caecum, and markedly inflamed. No explanation as to the origin of the condition was offered. Dr. Walter Carr described a case of *Pneumococcal infection* simulating generalized tuberculosis in an infant aged 15 months, admitted to hospital with an indefinite history of illness. The case was at first thought to be one of acute pneumonia, but when after several weeks the condition remained unaltered, with an irregular temperature, it was thought to be one of general tuberculosis. Calmette's test gave a negative result. The child died, and the autopsy

revealed no trace of tubercle, but a general pneumococcal infection. There was well-marked pericarditis. The right lung was universally adherent, and the upper lobe showed old unresolved pneumonia; the left lung was also adherent. The peritoneal cavity contained about a pint of semi-purulent fluid. Dr. SUTHERLAND said he regarded the case as a very unusual one.

ROCHDALE AND DISTRICT MEDICAL SOCIETY.

Thursday, October 21st, 1909.

Dr. JAMES MELVIN, President, in the Chair.

DR. MELVIN, in an address on *Faith Healing*, said that the practice of "touching for the King's Evil" was introduced in the time of Edward the Confessor; it was associated with religious ceremonies and the passing of the Royal hands over the face of the kneeling patient. Wart charming had been practised from the earliest times, and high authority could be cited for its efficacy. Hypnotism commenced in the eighteenth century, being introduced by Mesmer; he practised it with great success in Germany, and in Paris reached the height of his fame; his patients were so numerous that he delegated his mesmeric functions to a tree. Subsequently, as the result of the findings of a special Government Commission, Mesmer was utterly discredited. The address concluded with an exhaustive account of Mrs. Eddy's views as to the non-existence of matter and pain. In the discussion which followed. Drs. MENZIES and COX insisted on the desirability of the medical profession putting the power of suggestion to greater use than had hitherto been common.

Reviews.

THE BLACK DEATH.

MUCH has been written about the great outbreaks of disease which from time to time have decimated nations, but modern historians till comparatively recent times were too much occupied in chronicling wars and political intrigues to bestow attention on the far-reaching effects of epidemics on social evolution. How potent a factor disease is in the history of a people is well shown by the Black Death. The history of that devastating pestilence has been written from one point of view by Dr. Creighton, and from another by Abbot GASQUET, D.D., the President of the English Congregation of Benedictines, whose learning and literary abilities have earned him a place in the first rank of living English historians. A reprint of his *Black Death of 1348 and 1349*[1] has been published recently, and will be read with interest by those who recognize the important part disease has played in the history of all great social upheavals. Dr. Gasquet has estimated the Black Death at its true value. Hitherto, historians have regarded this terrible epidemic as an isolated incident of Edward III's long and eventful reign, of less interest and far less importance than the French wars. Dr. Gasquet, on the other hand, treats it as the most important event of the Middle Ages, and a prime factor in the making of modern England. It was, as he remarks in his introduction, "a turning point in the national life. It formed the real close of the Mediaeval period and the beginning of our Modern Age." Tracing the whole course of the plague, which, starting from its home in the East, travelled across Europe and finally spread ruin and desolation throughout the British Isles, the author gives a graphic description of its effects, both immediate and future, and its tremendous results upon English society, religion and morality. There seems to be every reason to believe that the Black Death (which for two or three centuries was known simply as "the death," "the great mortality," or, as Piers the Ploughman always calls it, "the pestilence") was in reality bubonic plague. Simon de Covino, a doctor of Paris, who wrote a a poetical account of the outbreak at Montpellier, calls it *pestis inguinaria*, or bubonic plague of the East. The truth of this theory is proved by all descriptions of the symptoms left us by eye-witnesses. The Black Death in Europe, however, seems to have had certain characteristics peculiar to itself. These are enumerated by Dr. Gasquet as follows: "1, Gangrenous inflammation of the throat and lungs; 2, violent pains in the chest; 3, the vomiting and spitting of blood; 4, the pestilential odour coming from the bodies and breath of the sick." The vomiting of blood is the most distinctive feature of the Black Death, which, in all other respects, exactly resembles the later epidemics of bubonic plague in England. The disease never lasted longer than three to five days, and frequently ran its course in a few hours. Usually it began with swellings under the arm and in the groin, followed by high fever, delirium, and death, but there were several different forms.

> Some were struck suddenly and died within a few hours; others fell into a deep sleep from which they could not be roused; whilst others again were racked with a sleepless fever and tormented with a burning thirst.

A peculiarly malignant type of plague was characterized by small black pustules on the skin, and from this very few recovered. The glandular swellings, however, were not necessarily fatal, for we learn from contemporary writers that many people had them and lived; but the spitting of blood was an infallible sign of impending death. It is interesting to note one peculiarity of this epidemic: it claimed a large part of its victims from among the young and strong, whilst the mortality amongst men was greater than amongst women. Medical treatment appears to have been simple enough, consisting merely of lancing the swellings, which in many cases were dry and hard and contained little or no fluid. The unfortunate patient was left to nurse himself, for the fear of infection was so overpowering that none dared enter a plague-stricken house, and the sick and dying were abandoned by their nearest relatives. The dead lay in heaps in the streets or in the deserted houses, with no one to bury them, for it was almost certain death to touch a corpse, or even the clothes he wore, or the bed on which he lay. So deadly was the infection that once the disease entered a house there was no hope of escaping it; parents, children, servants, even the domestic animals, usually succumbed within a few days, and lay "shut up within their own houses, when the effluvia which came from their corpses was the first intimation of their deaths."

There can be little doubt that the Black Death came into Europe from China. During the first half of the fourteenth century, according to the Chinese annals, the people were reduced to such a state of misery that the dead lay unburied all over the country. A pestilence broke out which raged with frightful virulence all over the East. The Tartars carried it to the Crimea, where they infected a small colony of Italian traders; these in their turn introduced it into Italy, which was almost depopulated in consequence. From Italy it spread to France, and thence to England. It made its first appearance on these shores at Weymouth in the month of July, 1348, and spread rapidly throughout Dorset, Devonshire, and Somerset. It reached London in the autumn of the same year, by which time it was raging all over England. Wales and Ireland were attacked at the same time, but in the latter country only the English colonists suffered. Scotland escaped until the following year. It is almost impossible for us to realize the state of England during and after the Black Death. Dr. Gasquet estimates that "the disease swept away fully one-half of the entire population of England and Wales." But even that stupendous fact fails to bring home to us the desolation and terror throughout the length and breadth of the land and the utter disorganization both of public and of private life. For many years the whole country bore witness to the terrible ordeal through which it had passed, and which had had as disastrous an effect upon the morals as upon the material prosperity of the people.

Yet the results of the Black Death were by no means entirely evil, for the plague was the immediate cause of a social revolution so important that its effects have lasted to our own times. The sickness had destroyed so large a proportion of the labouring class that the survivors found themselves in a position which enabled them to place their own price upon their services. They were not slow to realize their power over their helpless employers, and to take advantage of it. The years following "the great mortality" witnessed the abolition of serfdom, the struggle

[1] *The Black Death of 1348 and 1349.* By Francis Aidan Gasquet, D.D., Abbot-President of the English Benedictines. Second edition. London: George Bell and Son. 1908. (Pp. 255.)

of the serfs towards complete freedom and independence, and the gradual rise of the lower orders from mere "dumb, driven cattle" into a powerful body of men, bound closely together by a common interest, protected by the newly-formed trades unions, and strong enough to wrest their privileges by force from the unwilling hands of King and nobles. The Black Death had yet another important result. Whilst all progress in the art, education, and commerce of the country was checked for years to come, religion received a blow from which it did not recover for a long time. The decay in religious fervour which is so striking a feature of the latter half of the fourteenth century was partly the natural and inevitable result of the overwhelming national catastrophe, but it was also due to the scandalous state of things arising from the lack of priests properly qualified for their work. So few priests had survived the plague that the bishops were forced to ordain mere boys, half-educated, and often wholly unfitted for the cure of souls. The bad example set by many of these men, the frequent scandals and abuses in the Church, had a demoralizing effect upon the people. At that time the seeds were sown that were to bear fruit in a future generation. There can be no doubt that the Black Death paved the way for the Reformation, as well as for a new order of things in the body politic.

MALARIA AND THE DECADENCE OF GREECE.

The influence of disease in sapping the manhood of a people and leading to its political, moral, and intellectual decadence is well illustrated by Mr. W. H. S. Jones's book, *Malaria and Greek History*.[2] In a little work written at the suggestion of Professor Ronald Ross and Mr. A. E. Shipley, and published a year or two ago,[3] Mr. Jones had tentatively sketched out a theory, which is corrected and developed in the work here reviewed.

Briefly stated, it is that malaria fell like a blight upon many fertile districts of Greece, as it almost certainly fell upon Attica in the fifth century B.C., and that the disease played a large part in the decadence of the race. Mr. Jones gives the results of a critical survey of Greek literature, including the non-medical as well as the medical writers, and the body of evidence which he has thus collected, if it does not carry full conviction, makes a strong case for his contention. He shows, both by direct testimony and by the analogy of certain districts in France, the Roman Campagna, and many parts of India, that malarious regions gradually lose many of their inhabitants not only by death but by emigration. Those who leave the country are naturally the richer and more intelligent of the natives, till at last there remains but a residue of the poor, the stupid, and the unenterprising. Left to themselves these unfortunate people inevitably sink into deeper degradation. The young are foredoomed to the disease, which has also a very decided effect in shortening the lives of those who grow up. Hippocrates recognized that among the evil consequences of malaria are laziness and cowardice. It also reduces the population not only by the number of victims whom it kills, but by diminishing fecundity.

Mr. Jones does not hold that malaria alone is accountable for the decadence of Greece; it was one of many factors. Its consequences may be stated in his own words in a series of propositions in which he sums up its effects: (1) The rich, the capable, and the energetic seek healthier homes, and so the inhabitants of a malarious district tend to become a mere residue of the poor and wretched. (2) Cities being, as a rule, less malarious than cultivated plains, the urban population tends to absorb the agricultural class, and national physique and well-being suffer in consequence. Cities isolated by malarious surroundings often fall into decay and ruin. (3) This process will be accompanied by great economic loss, for extremely fertile districts, which are the peculiar prey of malaria, may fall altogether out of cultivation. The ruin of agriculture is a great blow to any country, and it must be remembered that malaria attacks farmers in particular, and that mostly at harvest time, when all their energies are specially needed. (4) Malaria falls most heavily upon the young, whose physical powers are so weakened by repeated attacks of fever that childhood may be one long sickness and adequate education impossible. *Aestate pueri si valent satis discunt.* The inhabitants of malarious districts age rapidly and die young. (5) Exertion and strain often bring about a relapse, because the malaria parasite will live in the body for months or even years. Naturally the inhabitants of malarious places tend to avoid fatigue and to become sluggish and unenterprising. A habit of laziness is gradually formed. (6) Account must also be taken of the loss of life, loss of time, and the physical suffering caused by the disease, besides the permanent psychical disturbances it may produce in the patient.

Mr. Jones concludes that from 400 B.C. onwards malaria was endemic throughout a large part of the Greek world. Therefore, he argues, whatever be the time when it was first introduced, it must have been producing its inevitable consequences at least during the fourth century and after. These consequences include the desolation of whole districts, caused by the death or flight of the most energetic inhabitants; the harm inflicted upon children, the chief victims of malaria; the economic loss resulting from the decay of agriculture and the incapacitation of labourers and others; the development of habits of inactivity or laziness, due to the fear of a relapse, which generally follows over-exertion or chill. The history of medicine after 400 B.C. shows a growing popularity, extending even to the cultured classes, of dream-oracles, charms, and other superstitions. This has never yet been adequately explained, but an increase of malaria and its sequels, which cannot be successfully treated without quinine, would account for the growth of superstitious practices and the decline of rational methods of cure.

Dr. Withington contributes a most interesting and learned chapter on Greek therapeutics and the malaria theory, in which he puts forward an explanation of the collapse of rational medicine before temple cures and other superstitions. The rapid development and spread of the therapeutic dream-oracle coincided with a cessation of scientific medical progress and a substitution of "cures" for clinical histories and observations. Physicians themselves adopted charms and "purifications." The post-Hippocratic period was marked by a loss of the scientific spirit, and Dr. Withington suggests that this was due to the increase and spread of a disease, such as malaria, against which rational medicine was at a disadvantage as compared with religion, magic, and empiricism.

Whether the views of Mr. Jones and Dr. Withington be accepted or not, they have added a fascinating chapter to medical history and made a suggestive contribution to the study of the causes which influence the destiny of nations.

TROPICAL MEDICINE.

The last number of the *Annals of Tropical Medicine and Parasitology*[4] is devoted entirely to a paper on "An Investigation into the Mechanism of Production of Blackwater Fever," by Drs. Barratt and Yorke. It is an excellent piece of work, and contains, in addition to much else that is interesting, a very large number of carefully recorded observations. In their introduction the authors observe that in the past the study of blackwater fever has been chiefly clinical, but that the recent advances in experimental physiology and pathology, and, above all, in physical chemistry, have provided methods applicable for research work in the disease. This is true. It is probable that the further advance of knowledge with regard to the etiology of this somewhat obscure complaint will come about in this way. The subject is undoubtedly difficult from whichever side it is attacked, and the first three sections of the work will appeal chiefly to specialists. They deal with the haemolysis of red blood cells by quinine, and also by acid, alkali, and urine; the relation of haemolysinaemia to the haemoglobinuria of blackwater

[2] *Malaria and Greek History.* By W. H. S. Jones, M.A., Fellow of St. Catharine's College, Cambridge, Assistant Master at the Perse School. To which is added the History of Greek Therapeutics and the Malaria Theory. By E. T. Withington, M.A., M.B., Balliol College, Oxford. Manchester: At the University Press. 1909.

[3] *Malaria; a Neglected Factor in the History of Greece and Rome.* By W. H. S. Jones, M.A., with an introduction by Major R. Ross, F.R.S., C.B.: and a concluding chapter by G. G. Ellett, M.B. Cambridge: Macmillan and Bowes. Pp. 108. 1907.

[4] University of Liverpool. October 1st, 1909. Series T.M. vol. iii, No. 1, *Annals of Tropical Medicine and Parasitology.* Issued by the Liverpool School of Tropical Medicine. Liverpool: At the University Press. London: Constable and Co., Ltd., 10, Orange Street, Leicester Square, W.C. (Price 10s. 6d. net.

fever, and the relation of haemoglobinaemia to haemoglobinuria. In the fourth section the mechanism of suppression of urine in blackwater fever is considered. After a careful study of the histological pathology of kidneys from two individuals who died of this serious complication, the authors conclude that suppression of urine in blackwater fever is of mechanical origin, due to a blocking of the renal tubules. This is probably the theory now most usually accepted; at least, the saline injections introduced some nine years ago were supposed to act specially against that danger by washing out the casts in the kidneys, and so preventing the mechanical obstruction. Another peculiar point brought out in this chapter (p. 107) is the small number of records of the aspect of the kidneys in suppression of urine in blackwater fever, accompanied by a report of the microscopical appearances. This is, no doubt, true, although many sections of the condition have been cut from time to time, and can be seen in one at least of the tropical schools of medicine—such a one, cut in 1902, showing very clearly the details described by the authors; but the original observer does not seem to have attached to the condition the importance now attributed to it. In Section V, on the mechanism of production of blackwater, there are some statements which are bound to be criticized by students of the subject; on p. 153, for example, one reads "that the assumption that considerable destruction of red cells occurs in the peripheral blood during an attack of blackwater fever, an assumption based upon red cell counts per cubic millimetre before and after the attack, has not yet been established, because the total volume of the blood has not been determined in these cases, and the influence of any accompanying variation in the volume of blood plasma thereby determined." The authors will find a difficulty in persuading clinicians with a large experience of the disease that there is no considerable destruction of red cells during an attack of blackwater fever; the blanching and pallor of the patient, the sighing respiration, the restlessness, the hiccough, and the great tendency to syncope, certainly suggesting a serious loss or destruction of red cells. The authors rather weaken their position by stating a few pages further on (p. 160) that amongst the symptoms seen in the cases coming under their notice rapid anaemia was one. How did they establish this? Did they determine the total volume of blood before coming to this conclusion? The fact of there being no red cells containing parasites in the peripheral blood on one occasion just before the onset of haemoglobinuria does not settle the point. There may have been plenty of parasites in the blood of some of the internal organs, and it is quite conceivable that that is where the haemolysis takes place. It is well known clinically that an attack of blackwater fever generally completely clears the blood of malarial parasites, and the patient as a result may be free from fever for a considerable time afterwards. These are a few points worthy of discussion and criticism. The histories of the cases studied complete the book. In addition to being interesting, they will be found useful, as they are very carefully recorded. As already stated, the report is an excellent piece of work. Diagrams, tables, and charts throughout the text enhance its value.

Another report on sleeping sickness is to hand; it deals with the work of the investigations of sleeping sickness done during 1906–1907 by the Commission sent to East Africa[5] by the German Government. It is by Professors KOCH, KLEINE, and BECK. It contains accounts of researches on the *Trypanosoma gambiense*, on *Glossina palpalis*, and on general measures for combating sleeping sickness by Professor Koch. The diagnosis of sleeping sickness by gland puncture, lumbar puncture, and blood research, clinical researches on sleeping sickness, the treatment of sleeping sickness, and measures taken against sleeping sickness in British East Africa (Sese Islands and Uganda) are the subjects discussed by Dr. M. Beck. The treatment of sleeping sickness with other preparations than atoxyl and the measures taken against sleeping sickness in German East Africa (Kisiba and Schirati) are described by Dr. Kleine. There are three appendices, the last containing the clinical records of some hundreds of cases studied. It is rather unfortunate that the report of work done in 1906–1907 should appear so late as 1909, because in a subject to which so much keen study is being given, work done and written one year may be rather out of date the next. Several of the special points, such as the part crocodiles play in keeping up the numbers of *Glossinae*, the value of atoxyl as a curative agent in the disease, and so on, have not only been already freely discussed, but their true importance was defined a year or more ago. The history of the question of crocodiles as food reservoirs for the tsetses shows how much care must be taken in drawing general conclusions from a special instance. It is now known, for example, that there are plenty of places where tsetse flies abound and crocodiles are completely absent, so that if a campaign of destruction had been organized on the Victoria Nyanza against these reptiles, it would practically have meant throwing valuable money away, as the fly would have adapted itself to the changed conditions, and fed on monkeys or other animals inhabiting its special zone. The first rosy coloured reports of the success of atoxyl as a permanent curative drug for sleeping sickness have not been substantiated, sufficient time having now elapsed to follow up the original cases. Bagshawe, in his quotation from a report by Hodges (about to be published) at a recent meeting of the Society of Tropical Medicine and Hygiene, sums up the matter tersely thus: "The number of early cases which have maintained their improvement has steadily decreased, and the number of cases likely to be permanently cured is now inconsiderable." It is interesting to note that as regards the value of blood examination as a diagnostic method in sleeping sickness, Dr. Beck gives 50 per cent. positive at the first examination with a further 20 to 28 per cent. at a second. This supports the conclusions of the French Commission as to the value of blood examination, and should place this method of diagnosis on a firmer basis. Kleine's valuable experiments on the development of the trypanosomes inside the *Glossina* are of too recent date to be included in the report. The photographs which illustrate the report are excellent, seldom can better have been seen, and they give a very good idea both of the disease and the country in which it occurs.

[5] *Bericht über die tätigkeit der zur erforschung der Schlafkrankheit in Jahre 1906–1907, Nach Ostafrika entsandten Kommission.* Erstattet von Dr. R. Koch, Dr. M. Beck, and Dr. F. Kleine. Berlin: Julius Springer. 1909. (Demy 4to, pp. 318; 5 Tafeln und zahlreichen in den Text gedruckten Abbildungen.)

MEDICAL REFORMS.

THE object of Mr. H. ELLIOT-BLAKE, in his book *Medical Reform Measures*,[6] is to give a "concise explanation of practical and remedial measures" of medical reform which he has from time to time advocated. The greater part is taken up with a plea for the reform of the Royal Colleges of Physicians and Surgeons in London and their junction with the University of London. A useful short history is given of the rise of the orders of surgeons, physicians, and apothecaries, and the growth of the Royal Colleges. The author laments that in the Royal College of Surgeons of England all just governing power has been taken from the Members, and he speaks of the present "debased status of the Licentiates" of the Royal College of Physicians. A sketch is given of "the fight for the supremacy in the College between the fixed and sagging oligarchic governing class and the indifferently treated but advancing Members;" and he argues that "the strong fibre of discontent, dissatisfaction, and unrest" could best be improved by a junction of the colleges with the University of London. An attack is made on what the author holds to be an excessive number of examinations, and we read: "Nothing is more required for the advance of medicine in London than the end of the rule of the Examinee-Prude in the hot-house examining system of the university of London." A summary is given of the reasons for reform and the ways and means, and a table showing that in competitive examinations with graduates for the services the diplomates come out at the top. The author further advocates an Act of Parliament for "the abatement of unnecessary noises." He next claims that every medical practitioner should have the use of the courtesy title of "Doctor," on the special ground that through the General Medical Council the "standards of qualification have so conformed to the general level of the State's requirements

[6] *Medical Reform Measures, including the Reform of the Medical Colleges.* By H. Elliot-Blake, M.R.C.S., L.R.C.P., L.S.A. London: J. Bale, Sons, and Danielsson. 1908. (Fcap. 4to, pp. 155. 5s.)

that the licence or university qualifications must now be legally regarded as synonymous." Finally he sketches the provisions of a proposed bill for the limitation of quackery, which would establish a legal right in prescriptions to be possessed by "medical doctors," and make it an offence to sell pharmacopoeial drugs except under certain regulations. The proposal that the Government should institute an inquiry into unqualified practice makes this quite opportune, and no doubt the author's suggestions will receive due consideration.

The style and diction of the book are unique. To call its style an elaborate imitation of the eighteenth century essayists would be unfair to its originality. A large proportion of the sentences need reading twice before the meaning can be grasped, owing to the habit of piling up polysyllabic and phrase-adjectives in an ultra-German way. The style is adapted for expressing biting sarcasm, with which the book abounds, but the smile that it raises is often rather at the mode of expression than at the object of sarcasm. Two or three typical examples may suffice. Speaking of university examinations, we read: "The passing scholarship of eclectic dunderheads is best typified in commemorative work, and in compilations, and in the passing ebulliency of oratory." Of Royal Commissions, the author says they "are endangered by influential dallying with the hindering pomposities of over-civilization." While of legal actions in the High Court, he says: "The proceedings often amount to nothing but a lawyer's forum, with some acataleptic legal battledore and shuttlecock tactics." Occasional expressions like these might have been effective enough, but when nearly every page is burdened with such laboured phrases the impression left is one of regret that the author should have given such licence to an exuberant verbosity, or, to use his own phrase, to an "ebulliency of oratory," where a few plain facts would have done more good. The regret is all the more as many of the reforms advocated are so desirable.

NOTES ON BOOKS.

THE student of social customs has not failed to notice that the valentine has quite lost its vogue, even with the masses, and there were signs some years ago that the Christmas card was losing its popularity. Had it gone out of fashion it would have been a disaster for the Postmaster-General, and would have meant the disappearance of a pretty custom. Within the last few years the publishers have come to the rescue, and after a period when composite cards chiefly printed in Germany reigned, we seem now to be coming to a time when British publishers will issue at a low price well-chosen small books in good print and pretty bindings worth preserving for their own sake, which, though not ostensibly designed to replace the old-fashioned Christmas greeting card, may very well be employed for this purpose. The latest we have seen is the *Gem Series* of Messrs. Macmillan, small miniature quarto-shaped volumes, artistically printed with decorated titles, and tastefully bound in peltine leather, which is apparently some kind of paper, but looks like *peau de suède*. The volumes include Fitzgerald's *Omar Khayyám* (fourth edition); Tennyson's *In Memoriam;* Christina Rosetti's *Goblin Market*, with Laurence Housman's illustrations; Washington Irving's *Christmas*, with Caldecott's illustrations: selections from Miss Mitford's *Our Village* with the title *Country Pictures;* and Hood's inimitable *Faithless Sally Brown*, with other poems. The price of the volumes is 1s. net each.

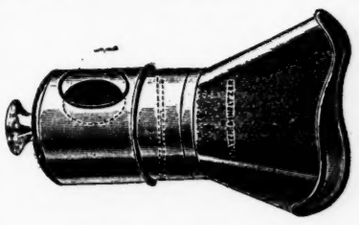
There is a feature of melancholy interest in these *Reports*,[7] an article on "Seven Cases in which Operation Wounds were Infected with *Molluscum contagiosum*," by Mr. Paton, who did not live to see it published. His colleague, Dr. Drummond Robinson, has written a graceful obituary notice, which also appears in this volume. The article by the deceased surgeon deserves study, and dermatologists will certainly not overlook it. Mr. W. G. Spencer reports some abdominal cases. One instance of apoplexy of the ovary deserves notice because although the blood cyst did not burst it might have done so and caused more or less severe intraperitoneal haemorrhage, and at the same time there was no evidence of extrauterine fetation. De Rouville has recently published a monograph on retro-uterine haematocele caused by rupture of haemorrhagic cysts in an ovary the subject of microcystic degeneration, which confirms the views of Mr. Spencer and of another observer whom he quotes. Dr. Hebb writes on the vaccine treatment of a case of sycosis, on a remarkable instance of thoracic fistula of obscure origin, and other subjects. Dr. Stoddart's "Some Remarks on the Instinct of Lying, with the Report of a Case of 'Pseudologia Fantastica,'" will interest psychologists. Dr. de Havilland Hall treats of the haemorrhages met with in chronic Bright's disease, especially retinal and nasal. There are, besides those above mentioned, several interesting original articles, and a second obituary, the subject being the late Dr. B. L. Abrahams, the author Sir W. Allchin. The later pages of the volume include the Registrars' reports, also the report of the Pathological Department, and a catalogue of specimens recently added to the museum. The editors deserve credit for having prepared a very useful volume, showing what excellent work is undertaken at the Westminster Hospital.

[7] *The Westminster Hospital Reports.* Edited by E. D. Macnamara and E. Rock Carling. Vol. xvi. London: George Pulman and Sons, Limited. 1909. (Demy 8vo, pp. 414. 6s. net; to subscribers, 5s.)

MEDICAL AND SURGICAL APPLIANCES.

All-Metal Inhaler with Adjustable Airway.

MR. E. WILSON HIRD, M.R.C.S., L.R.C.P.Lond. (late House-Surgeon, General Hospital, Birmingham), sends a description of an inhaler he has devised for the administration of a mixture of ether and chloroform (E_2C_1), or for the administration of ether alone. A metal cap fits on to the anaesthetic chamber and has a large aperture in the side. This aperture, when the cap is in position, fits exactly over a similar opening in the anaesthetic chamber. By rotating this cap the strength of the vapour administered can be increased or diminished as desired. In the dome of the cap there is a small permanent airway. The anaesthetic chamber is a hollow metal cylinder open at both ends; one end receives the facepiece, the other is in contact with the dome of the metal cap. It is loosely packed with coarse sponge or gauze, maintained in position by a single metal bar running across the middle of the lower orifice. The facepiece fits into the anaesthetic chamber by bayonet joints; it is so moulded as to fit closely the curves of the average face. Very little anaesthetic is needed to induce or maintain anaesthesia. The following advantages are claimed for this inhaler: There is an adjustable airway by means of which the strength of the vapour administered can be regulated. It is economical, as there is no overflow of the anaesthetic from the sponge or gauze. It is very easy to handle and is perfectly balanced; with the largest facepiece it only measured 6 in. in height. By having three different-sized facepieces a perfect fit is obtained. It is easily taken to pieces for cleaning and sterilization. A bag can be attached for the administration of ethyl chloride as a preliminary to ether. The inhaler is made by Messrs. Mayer and Meltzer.



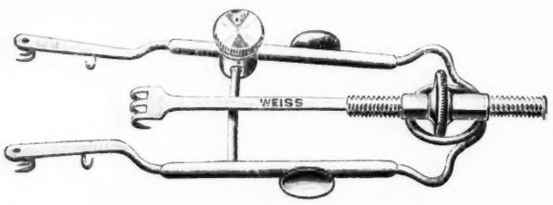
A New Spray.

The accompanying engraving represents a new spraying apparatus of glass and india-rubber, named the "Iris" spray. The glass is annealed, and therefore so far unbreakable that the apparatus can be safely carried in the pocket; in such case, and, indeed, whenever the spray is not in actual use, the point of the ejecting tube is protected, and the inroad of dust prevented, by putting over it the small cap shown in the illustration alongside the issuing jet. The appliance is of simple construction, all valves being dispensed with; it is easily filled, and the spray is notably fine. It is made in two sizes, the smaller one sufficing for the application of about 2 drachms of either aqueous or spirituous solution. The patentees and makers are Messrs. C. J. Hewlett and Son, Limited, of 35–42, Charlotte Street, London, E.C.

A Retractor for Use in Excision of the Lacrymal Sac.

Mr. N. BISHOP HARMAN, M.B., F.R.C.S. (London), writes: Some form of retractor is almost a necessity in performing excision of the lacrymal sac, first, to open out the

incision, which is awkwardly situated in a narrow place between the inner canthus of the lids and the side of the nose, and, secondly, because efficient traction on the tissues provides the best means of checking bleeding. At present Müller's and Axenfeld's tractors are those most generally used. Müller's is neat and convenient in form, but not sufficiently powerful as a haemostat. Axenfeld's is large and clumsy, but very efficient as a haemostat; yet it has a serious drawback in that its large claws drag the wound open vertically, and the upper claw is greatly in the surgeon's way in removing the upper *cul de sac* of the main sac, the complete removal of which is essential to the success of the operation. The instrument shown in the cut combines the actions of these two forms of retractors.



The frame is that of Müller, and it is no larger than his neat model, but, by an alteration of the prongs at the extremity of the laterally acting blades, and the addition of a claw (something like an old-fashioned "back-scratcher") which can be drawn back by the milled nut at the spring end of the frame, this retractor will exert the powerful tractor action of Axenfeld's instrument, and yet leave the upper end of the site of the operation free. In inserting the new retractor the instrument should be first closed, the blades approximated, and locked by the turn of the side check-screw and the long claw pushed home to just behind the side prongs of the lateral blades. The claws are inserted into the wound just as in using Müller's instrument. Now the side check-screw is released, and the blades being forced apart by the spring of the frame stretch the incision laterally; the side check-screw should now be firmly locked. The blades are then gently pressed into the wound by one finger, and the milled nut at the spring end of the frame turned so as to draw back the long claw; the front claws on the blades are pivoted and so shaped that they oppose the backward drag of the long claw, so that the incision is stretched tight. The field of the operation is well exposed, and the traction exerted on all sides of the wound acts as a most efficient haemostat, yet the important upper limit of the wound is left quite free of any obstruction that would hinder the work of the surgeon. The instrument is made by Messrs. John Weiss and Son, Limited.

MEDICINAL AND DIETETIC ARTICLES.

Glidine.

We have received from Messrs. Menley and James, Limited (Farringdon Road, London, E.C.), samples of their preparation called Glidine, and of various combinations thereof, for medicinal use. Glidine is a substance derived from wheat, and consists almost entirely of vegetable protein of the kind known as gluten. The specimen submitted to us showed on analysis the following composition:

Protein	87.9 per cent.
Fat	1.4 ,,
Ash	0.7 ,,
Water	8.3 ,,
Carbohydrates (by difference) ...	1.7 ,,

Only a trace of starch was present. The ash consisted chiefly of phosphate, and lecithin could be detected in the fat. The substance itself is a dry, yellowish-white powder, odourless and tasteless, and may be added to almost any sort of food to increase its nutritive value; it is stated that it is normally digested within one hour and entirely absorbed.

Ferroglidine.—This is a compound of iron with glidine supplied in the form of tablets; these were found to have an average weight of 13 grains, and to contain in each iron 0.35 grain, protein 3.1 grains. The advantages of administering iron in organic combination are well recognized, and it is claimed that in this case the combination is much the same as that in which iron occurs in natural ferruginous foods.

Bromoglidine and Iodoglidine.—These are preparations in which glidine is in combination respectively with bromine and iodine. Both are supplied in tablets which gave the following results on analysis:

Bromoglidine: Average weight of tablet, 12.7 grains; bromine, 0.8 grain; protein 5.0 grains in each.

Iodoglidine: Average weight of tablet, 13.4 grains; iodine, 0.8 grain; protein, 10.0 grains in each.

It is stated that the halogen is liberated from these compounds only when they reach the intestine, and that its full therapeutic effect is obtained without the undesirable results that may follow the use of bromides or iodides.

Luesan.—A combination of mercury with glidine is another of these preparations, and this is supplied under the name Luesan in the form of tablets. Our analysis of these gave the following results: Average weight of tablet, 11.1 grains; mercury, 0.15 grain; protein, 2.1 grains in each. This is intended to be used as a substitute for, or in conjunction with, mercury treatment by inunction, inhalation, or intramuscular injection. It is stated that it can be taken for months without ill effects.

Arsan.—Arsan is the name given to a combination of glidine with arsenic. The tablets are stated to contain 0.002 gram (0.03 grain) of arsenic in each, and this was confirmed by our analysis, which further showed the presence of 2.0 grains of protein. The average weight of one tablet was 8.6 grains. Arsenic is said to be discoverable in the urine only some days after it has been taken in this form, showing gradual absorption, and it is asserted to be less toxic than when given in the form of an inorganic salt.

All these preparations are practically tasteless, and the tablets were easily powdered.

THE MIND AS A THERAPEUTIC AGENT.

"The growth of Christian Science and various forms of mental healing"—to quote the President of the Harveian Society—"having made it incumbent upon the medical profession to take cognizance of the trend of public opinion, and to ascertain how far suggestion may operate in the treatment of morbid conditions," a discussion on the subject took place at the Harveian Society's meeting on October 28th. Dr. Charles Buttar occupied the chair.

The discussion was introduced by Dr. Claye Shaw, who said that when any theory was brought forward and recommended as fit for application by responsible men, it behoved them to examine its claims impartially, and if the basis were sound and the results credible, it was their duty to avail themselves of it in the interests of patients. As seen nowadays, the influence of mind as a therapeutic agent was chiefly practised under the term "suggestion"; and it was familiar under the term "hypnotic suggestion," though all suggestion was not of the hypnotic form. Let them have a clear conception of what was meant by "suggestion." It was the insinuation of a belief or impulse into the mind of a subject by any means, as by words or gestures, usually by emphatic declaration; also the impulse of trust and submission, which led to the effectiveness of such incitement. According to Dr. MacDougall:

> Suggestion is a process of communication resulting in the acceptance with conviction of the communicated proposition in the absence of logically adequate grounds for its acceptance.

Suggestion was no new thing; it was used in the times of Tertullian, St. Augustine, Scaliger, Hobbes, Locke, Berkeley, etc. The basis of much of the treatment by suggestion was the unseen and the intangible, and it rested on what was called the spiritual mind. It postulated the existence of connective processes, such as will, faith, power of attention, treating these as actual entities which could be influenced by being strengthened when weak, or called into energy when dormant. In the majority of those who practised it there was no idea of physical alteration in the sense of producing a change in tissue, their object being to strengthen will power and certain lines of thought, whilst weakening others which were adjuvant to the existing conditions of ailment. Others, however, did not go as far as this; they still appealed to what they called the entities, whilst acknowledging that the revival or strengthening of these entities had an appreciable effect on the nerve structure. The reverse process—the influence of structure or material on the mental processes—they must ignore, because the dependence of mind upon structure was to them not necessary. They might perhaps go so far as to

allow that proper diet, tonics, etc., were useful as enabling the "mind" to act upon an improved tissue, which was before this physically impaired, and therefore incapable of playing its subsidiary rôle as the exponent of what the "mind" wanted or intended, but that was not the primary object of the treatment. This was the strengthening or the correction of an intangible essential principle which overrode all other conditions of whatever sort. This must be so, since the supporters of treatment by suggestion stated that they had cured epilepsy, locomotor ataxia, neurasthenia, etc.—conditions which most people associated with organic disease of tissue.

In the course of a discussion on treatment by hypnotic suggestion at the meeting of the British Medical Association held at Exeter in 1908, one distinguished member unhesitatingly affirmed that by his methods he had succeeded in effecting cures in cases of the kind referred to, and, though histories and exhibition of the cases could not, under the circumstances, be given, the *ipse dixit* of the reader of the paper was received as being the truthful experience of a qualified and conscientious medical man who had clinically investigated the pathological conditions which he reported to be cures. There were, then, two schools: the one held that there was a purely mental element, susceptible to influence by direction, by dictum, by appeal to it as a primary and separate agent; another regarded mental conditions as inseparably associated with nerve states, and denied the existence of such separate entities as will and active attention, except in so far as they were *exhibitions*, the result of nerve states secondary to or parallel with definite activities of the nerve elements.

The difference between the two schools was important; the one which might be called that of the unfettered or free thinkers did not really require any training at all in medical matters, and very often it had none. Its upholders dealt with an impalpable something which they could not materialize; they had no surgical cabinets, no anaesthetics, no pharmaceutics; they appealed to the individual to cure himself, or to receive from themselves an authority which should be incorporated and become a will of their own, and tried to assist him by taking upon themselves the responsibility of "suggesting" that such and such results would follow the cultivation or employment of a definite mental process which they might or might not indicate. In its extreme forms no education was required for this. The man who had studied the nature of disease and was unable to separate structure and function was pitted against him who violently dislocated the two, and elevated function into an independent and controlling position—these function specialists forming the class called faith-healers, exponents of which doctrine were to be found in every section of society. Still there were many educated medical men of position and reputation who resorted to suggestion as a remedial agency, either alone or in combination with other medical and surgical methods; and though it might be difficult to say how much of their success was due to the one or the other factor of the combination, or even to the combination itself, yet people who had the interests of their patients at heart wanted to know, if possible, how much truth there was in the theory of those who employed suggestive treatment. They wanted to know how much humbug, if any, entered into the composition of treatment by suggestion, and whether there was so much truth in the process that it must be seriously entertained. They could scarcely avoid discussing the present position with regard to the *spiritual* life, because it was with this that suggestion was concerned. Was there such a thing? Was there, apart from the bodily tissue, a something independent of it which could operate on and be affected by this body, and which could be used by the patient for his own advantage? What was the controlling agency that was to whip up or put the brake on the dormant or the perverted will? Was there a higher will somewhere in the background? The religious party said there was, and this was what they called the Deity, and He must be petitioned to give power to use the will in the right direction. Did the hypnotist, then, or the suggestor make himself into a *deus ex machinâ?* Did he impose his own will on that of the patient and arouse it or guide it in a vicarious manner? If there was no such spiritual world, no such Deity, then millions of men had been for ages and now were mistaken, and immeasurable oceans of blood had been spilt over a myth. The teaching of the Church in all its forms was by suggestion and—what was linked with it—by authority.

The greater one's experience the more one must acknowledge that there were possible powers and influences which were at present unknown to us more closely, and it was this indefiniteness, ignorance, and want of precision which was made the ground of the spiritualists, the hypnotists, and the suggestors. Nor could one say that they were wrong, When modern science had demonstrated the actual truth of bombardment by ions as the cause of magnetic storms and the phenomena of the aurora borealis; when the composition of matter was said to consist of concentric whirls of electric ions rotating with inconceivable rapidity, who was to say to what at present unseen and unknown agencies one might not yet be introduced, or that their feelings that a spiritual world did exist may not be brought within actual demonstration? The modern school of psychology was absolutely materialistic in its teaching. It insisted that will, attention, and causative processes were *results*, not causes, and if so that there were, of course, no such things as primitive faculties in the direction of compelling forces. Instances, however, were not wanting where men who had ceased teaching but not thinking, found themselves saying, "Now that my teaching is done, I am constrained to own that there is yet something to be explained—'I will' goes beyond 'I must.'" Take the three processes of voluntary action, attention, and emotion. Modern physiologists said that the two former could be analytically split up into certain components, but that they depended chiefly upon the strength of emotion, but they knew nothing of the real nature of emotion. In his recent lectures Dr. Mott gave the results of a most learned investigation of emotion, entering fully into all that was known of its connexion with bodily and visceral states, but the speaker submitted that they were still no nearer the understanding of the real nature of emotion than before. If so, then they could not understand any more the real nature of the curative processes. The study of psychology was almost unknown in the medical curriculum. Of what use, they said, was it to study the intangible, which had no basis capable of physical treatment, when one knew that one had a material at hand which, when impaired or affected, rendered manifest mental obliquities? But were we quite sure that mental defects and aberrations were necessarily connected with structural defects? Was insanity always the result of diseased structure, or might it not be associated with a tissue somewhat different in kind and function from what was usually met with? There were some forms which led one to think so.

It was not necessary to assume the supernatural and to profess to treat an essence without influencing the physical substratum, for the structure might be influenced by psychical processes, but it was in a *physical* manner. Most of them used suggestion without perhaps appreciating what they were doing—for instance, the annual holiday, during which they forgot the work which had reduced them to a state of mono-ideism, was nothing but suggestion. He had it on authentic evidence that during the great earthquake at Valparaiso paralytics jumped from their beds, as also did people with actual pneumonia, and, moreover, that they were cured. Of course, in all these processes there were secondary factors, such as the physiological changes brought about by rest or movement, which contributed to the improvement or cure; but the suggestion, or change of ideas, was the primary thing. Much of the modern treatment of lunacy was suggestive—for example, the dances, concerts, games, and gymnastics had the object of rousing dormant tracts, and the assurance that there was "nothing the matter" had had the best effects upon people who thought they were ill, but it required the man who gave the opinion to be sure of his facts. The quack, though ignorant of underlying morbid conditions, was often successful because he was a psychologist, and was able to put himself *en rapport* with the trend of the patient's mind.

Clever amateurs might be successful where the ordinary professional man failed, not because of supernatural powers, but because they were by nature more acute students of the trend of mental states, though they might

do harm by not ceasing in time, or by engrafting a morbid trend, or by unscrupulous uses of their knowledge for their own private ends. After all, specialists in suggestion were not very numerous. Why were there not more of them if it was so valuable a remedial agent? He took no account of theosophists who believed themselves to possess a knowledge of the Divinity and his works by supernatural inspiration, nor of Christian Science devotees, whose methods seemed to him ridiculous; but, confining himself to those medical men who used suggestion pure or combined with hypnotism, he would ask, Must there not be valid ground for using it as a therapeutic agent? Personally he believed there was. They were not *all* able to use it beyond a very limited extent. It was in such conditions as chronic inebriety, opium, or drug habit that suggestion was most powerful; in acute insanity he had not seen it successful, and though it had been fairly tried in asylum practice it had not obtained general recognition as a therapeutic agent.

It was not always easy to distinguish between functional and organic disease, and, bearing this in mind, they might be inclined to side with the exponents of suggestion that no case should be relegated to the scrap-heap of failures without this method having been tried.

Dr. J. MILNE BRAMWELL gave a brief history of the employment of suggestion in the medical profession. James Braid, the father of hypnotism, drew attention to the fact that when a drug was given it was worth while trying to find out how much of the effect was due to the drug, and how much to the mental influence of the physician. Much of the suggestion treatment, said Dr. Bramwell, had been unconscious. The enthusiastic practitioner prescribed a drug with great confidence, and this evoked confidence in his patient. Braid thought it necessary to put his patient into a condition of hypnotic sleep, but the opinion of the specialist had since moved away from this position. Neurasthenic patients came to him (the speaker) saying that they knew he could not save them; they had come to please husband or wife or doctor. He did not pretend to the possession of any mysterious force, nor could he explain his results. He placed his patients in an arm chair, and made the suggestions he thought appropriate in each case. They did not go to sleep—indeed, many of them were in such a condition that they could not rest at all. One of his recent cases was that of a clever young man, who had broken down through intellectual overwork, after severe shock. (His mother had committed suicide.) He had a form of locomotor ataxia, was emaciated to a skeleton, was subject to vomiting, and had to be assisted across the room. Six weeks after the treatment commenced he was leading a healthy life, and within a few months he was climbing mountains. Suggestion showed its best results in the treatment of obsessions. What drug could be possibly prescribed for a man, more than usually strong and brave, who had a morbid fear of cats? One patient, a schoolmaster, suffered from the obsession that he was being impelled by some one to throw himself from his class-room window. He said that he was ruined, and could never face his work again. He was told to get three months' leave of absence from his college, and in six weeks after the initiation of treatment by suggestion he was well, and since that time he had done brilliant work without any return of his obsessional fears. Dr. Bramwell concluded with a complaint against the professional press for its prejudiced attitude upon this question.

Dr. T. SEYMOUR TUKE said that, so far as his own speciality—the treatment of the insane—was concerned, hypnotism and suggestion could operate only in cases which were to all intents and purposes physically and mentally sound except upon one particular point. Hypnotism was of little use with the actually insane, and, indeed, it was of no use with any patient who could not concentrate sufficiently to put his mind in subjection to the power which was brought to bear upon him. Nevertheless, in his insanity work he had been impressed over and over again by the fact that it was possible by the exercise of patience to get into communication with the mind of the patient and affect him for good, especially in cases in which, save for one mental delusion, the patient possessed a great amount of common sense.

Dr. C. LLOYD TUCKEY also gave his experiences. He said that he had been using hypnotism for twenty years, and had seen a great change come over the profession in its attitude towards it. One prominent medical man a few years ago called hypnotism humbug, saying that the profession of medicine was in a most satisfactory condition, and that there were already twenty good remedies for every disease. This light-hearted optimism would not be widely shared to-day. What cure was there, for instance, for real dipsomania? One of his patients was a business man, who became madly, uncontrollably drunk at certain periods and loathed drink during the intervals. Suggestion was being tried in this otherwise hopeless case, and he was now on the way to an absolute cure. He (Dr. Tuckey) had cured three cases of Ménière's disease by suggestion, although he would not say that suggestion would cure every such case. In conclusion, he thought it unfair to medical students and young practitioners that they should be given no inkling of this treatment. He knew a Cambridge Bachelor of Medicine who recently came from New Zealand to London for a post-graduate course, and until the last few days of his visit knew nothing whatever about hypnotism. Such a man had a real grievance against the teaching profession. If suggestion could only cure 3 or 4 per cent. of the difficult cases—and he had never seen it do harm in any case whatsoever—it was worth while for the teachers in the hospitals to devote some attention to it.

Mr. STEPHEN PAGET, who followed, approached the subject from a somewhat different point of view. He had recently been inquiring into the works of Christian Science, and in all that he had been saying on that subject he had addressed himself to the man in the street. He spoke that evening as the representative of that individual. The man in the street especially wanted a definite and precise list of those diseases which were open to mental healing, and a similar list of those which were not. He further wanted to know the exact difference between functional and organic diseases, and under what conditions and to what extent hope and faith might help a man towards recovery after an operation, or enable him to pull through a long illness. Could the mind, acting through the nervous system, supplement, for instance, the diphtheria antitoxin? He thought it would be of great service if a committee of the profession could publish a clear statement setting forth in general terms the diseases which were open to the influences of mental treatment and those which were closed against such influences. But, in order to be acceptable to the man in the street, such a statement would have to advance beyond the bounds of psychology. He confessed to some disappointment that all the chosen speakers that evening, save himself, were men of authority. They were men who had given years of life to the study of psychology, and what they did not know might seem to be not worth knowing. At the same time, he thought that such a discussion ought not to be limited to pronouncements by men of authority, but that in a matter of this kind they needed non-expert, outside evidence. They wanted a formula which should cover the works of healing at Lourdes, the undoubted successes of Christian Science, the conversion of drunkards, and the striking results obtained by good parents in the care of morbid-minded children. They would never obtain such a formula so long as they stayed within psychology, or, if they worked it out in terms of psychology, they would never get the man in the street to accept it from them. The man in the street thought that psychology was not, and never would be, a complete science. In the popular opinion one could not so much as mention mind and will and consciousness without acknowledging certain philosophical principles which might be forgotten or denied by psychology. The man in the street thought that psychology was apt to do without such principles, especially when she gave herself to experimental work. The speaker took an extreme case to illustrate the difference between psychology and public opinion—the case of a boy addicted to sexual abuse. Popular opinion utterly refused to regard such cases as purely pathological. The boy, let them suppose, corrupted other boys at school, deliberately and of purpose. According to popular ideas such a boy ought to be severely thrashed. What he needed was not treatment by suggestion but heavy corporal punishment, and the nature of his offence and

the purpose of his chastisement ought to be made clear to him in language certainly not to be found in the vocabulary of psychology. Everywhere there was the same antagonism between the scientific and the popular mind. The man in the street insisted that he was more than a succession of states of consciousness. He still held the old ethical and religious concepts of human conduct. He was more than unscientific, he was antiscientific. He admired that line in Pope's "Essay on Man":

'Tis but a part we see, and not the whole.

If this individual were told that this was obscurantism, he instantly replied that this was the right attitude to take in a world in which so much was obscure. For the Greek word *psyche* he substituted the English word "soul." He was a philosopher, and there was no more ancient feud than that which was waged between true philosophy and true science. Christian Science, therefore, appealed to a man of this temperament. If psychology were a science in the sense in which astronomy and chemistry were sciences, the discussion would have no reference to popular opinion. But, as things were, medical men found themselves between two opposed armies, and not in perfect agreement with either of them. If they confined themselves to psychology they turned their backs upon a great many essential facts in human experience; and if they thought only of public opinion they got further away than they liked from real science, and nearer than they liked to Christian Science. It was not possible for the profession by any corporate action to give official recognition to matters which were of faith. Even if they all held—which they did not—the views of the man in the street, nothing would be gained by publishing the fact. He thought, however, that a statement as to the diseases in which mental treatment had a good opening and those in which it had not, clearly drawn up and widely circulated, would be an excellent weapon against the ill deeds of Christian Science, and in accordance with the best traditions of the profession.

Dr. R. H. Cole referred to the striking nature of his early experiments in hypnotism, but confessed to subsequent disappointment. He now came back to the subject, however, with a mind less sceptical, though still shaken. He had come to the conclusion that hypnotism was a potent power for good or evil. The exercise of this power in the treatment of diseases should be limited to medical men, and, moreover, to *certain* medical men. It was advisable for the general practitioner not to hypnotize his own patients, but to send them to the specialist. He thought it as well to emphasize the fact that as medical men they had a distinct position apart from the Church. It was best to separate purely spiritual agencies from their own methods of treatment. Hypnotic influence had nothing to do with matters of faith, which were upon an entirely different plane.

Dr. J. F. Woods related some of his experiences during the past seventeen years. In his early cases he invariably practised hypnotic sleep. He was very successful with one woman, of about 40 years of age, who had the delusion that persons were following her about intending to cut her up. She went into a hypnotic sleep within ten minutes, and slept for eight hours. On the following day she acknowledged that her fears were nonsense, and the delusions never returned. Later on he gave up the use of sleep, and treated the patients by suggestion alone. His practice was to place his patient in an easy chair, sit by him, and induce him to relax his muscles and quieten his mind. Sometimes he put his hand on the patient's epigastrium, so as to suggest tranquillity and warmth. The patient was told to remain in that condition until he returned, and, on returning, he generally found him to be fast asleep. Suggestion was most useful in all functional diseases, and it also did good in organic diseases by helping the nerve element. One lady, aged 36, consulted him in 1897 for sciatica. She had been treated by means of rest-cures, diet, plasters, drugs, fomentations, etc., without avail. He simply placed his hand upon her hip, outside her dress, and she immediately exclaimed, "The pain has gone!" That was the quickest result he ever had, and the cure of the sciatica was permanent, although five years later the patient came to him again for treatment of neuralgia in the head.

Mr. H. W. Armit thought that it was always better for treatment by suggestion to be carried out by a strange medical practitioner rather than by the "family doctor." He pointed out that in the course of the discussion there had been a constant succession of meaningless words. Such terms as "mind," "will," "subconsciousness," and "hypoconsciousness" had been introduced without any definition whatever. Was it worth while to attempt to explain—when it could only be done in this vague way—the action of suggestion, seeing that they understood nothing at all about it? As a toxicologist he maintained that they did not know anything about the action of the majority of drugs. They gave a person iron and cured his anaemia, but they had no settled idea as to the way in which the drug acted. He could definitely prove that it did not go to build up the haemoglobin. But because they could not explain the thing, it did not follow that they could not influence the patient. He thought that the success of the quack was in part to be attributed to the fact that he did not bother about the diseases which were or were not amenable to this form of treatment, but endeavoured to influence the patient's idea of his own disease and to make him comfortable. The speaker pointed out one danger to which those who applied suggestion in medical practice were liable. He knew of two pious individuals, husband and wife, who explained everything by saying that it was the will of God. The husband suffered from sciatica, and ultimately went to see Dr. Woods, who told him that he would get better thirteen days later. About ten days later he went to him again and said that the sciatica was worse than ever. He was told to wait for the thirteenth day, and on that particular day the sciatica went away, and he walked in three minutes a distance which had previously taken him twenty. But the man did not believe that Dr. Woods had cured him. He said that it was the will of God. If asked his opinion of Dr. Woods, he would reply that he was a wonderful man, but that he had a special gift of God.

Dr. Edwin L. Ash thought that one had to choose between two different methods: (1) Dominating the personality of the patient by the induction of the hypnotic state, and (2) combining suggestion with some material means of treatment. In his early work he followed the teaching of the time—that hypnosis was necessary before suggestion would work, but he had since revised his opinions. Success in the use of suggestion could be obtained only by the most careful estimation of the various factors. Sometimes suggestion could be used alone; at others it was necessary to have suggestion plus electricity, or plus prescriptions, or plus a course of massage. In a case of enuresis nocturna he impressed upon the child the fact that he would wake up at a certain hour in the night. Waking at that hour, he naturally was able to evade the consequences of his trouble. The reason for the enuresis nocturna was that the child slept too deeply, and the normal reflex action of the vesical muscular coats of the bladder was overlooked by the nervous system. He had known neuralgia in an old abdominal scar improve under suggestion, plus mild electricity—electricity so mild that he could not think the physical factor had any bearing on the result. He had not found suggestion of much use in actual insanity, but in very early symptoms the normal condition could be restored by suggestion and a serious mental breakdown prevented.

Some short personal testimonies were given by speakers other than those announced on the programme. Dr. W. H. Blake (West Wickham) mentioned a case of asthma of long standing which disappeared after hypnotic treatment. He maintained that there was no satisfactory cure for real dipsomania other than hypnotic suggestion. He had treated the secretary of a cricket club after an attack of delirium tremens, and the patient had remained absolutely right during the seven years that had since elapsed. His method was, under hypnotism, to impress upon such a patient how miserable his conduct was making his parents, and generally to restore his self-respect. The curious thing was that afterwards the man imagined that he himself had done it "off his own bat," and at the end of the treatment he rolled off these improving suggestions as though they were his own. A case of actual insanity in a soldier,

who was sent home from Wei-hai-Wei because he heard "voices," and believed he had committed the unpardonable sin, and prayed to be hanged or shot, had also come into his hands, and he was able by suggestion so to restore the man's mental balance that, although he was not permitted to return to the army, he had become a useful member of society.

Dr. CLAYE SHAW replied upon the whole discussion. "The distinguished members of our profession who have spoken this evening," he said, "have done so in a liberal spirit. They have stated, as responsible men, their belief in the efficacy of hypnotic suggestion. With the exception of Mr. Stephen Paget they have all been experts—all members of the mystic circle. Are we to put aside their experience? My conclusion is that the society is bound to accept the fact that hypnotic suggestion is in some cases of the greatest benefit. In answer to Mr. Paget, I would say that the man in the street has always concerned himself with psychological puzzles, and there is more in psychology and its connexion with science than Mr. Paget would have us believe. When we can reduce memory to a question of logarithms, express sensation in the same way, and, by applying certain instruments, test the quantity of emotional influence of which a man is possessed, we are getting very near to the linking-up of psychological entities with physical demonstrations. These things are being done. The power of attention is having physical education, and all the processes which we formerly supposed to be spiritual things and beyond understanding are gradually being brought into the rôle of physical science and being expressed in mathematical terms. We may in the future be able to see that the facts which these experts have expounded here to-night, although they themselves may not be able to explain their powers, harmonize with the spiritual elements of the clergyman, who has very often had to do with our failures."

THE INTERNATIONAL CONFERENCE ON LEPROSY.

IN the JOURNAL of October 16th, p. 1163, we published resolutions passed by the Second International Conference on Leprosy, held at Bergen in August last. We have since received the report of Dr. Arthur Newsholme and Sir Malcolm Morris, the delegates of His Majesty's Government to the Conference, in which they state that the Conference was opened on August 15th by H.M. King Haakon, who also presided at the inaugural banquet on the same evening, when the delegates and the British Colonial representatives were presented to His Majesty. Forty-eight official delegates representing twenty-two countries were present, and a large number of learned societies from different countries were also represented.

The following representatives from the British Colonies were present: Dr. R. J. Bull, delegate for the Commonwealth of Australia; Dr. C. F. K. Murray, delegate for the Colonies of the Cape of Good Hope and Natal; Dr. George Turner, delegate for the Colonies of the Transvaal and Orange River; Sir Allan Perry, M.D., delegate for Ceylon; Dr. J. E. Godfrey, delegate for the Colonies of British Guiana and the Bahamas; Dr. B. Glanvill Corney, delegate for the Colony of Fiji.

The conclusions expressed in the resolutions already published, which were passed with only two dissentients, were signed by Dr. Armauer Hansen, President of the Conference; Dr. H. P. Lie, the Secretary-General, and the following secretaries: Dr. E. Arning (Germany), Professor E. Ehlers (Denmark), Dr. J. M. H. Macleod (England), Dr. J. Darier (France), Dr. Dubois-Havenith (Belgium), Dr. E. Sederholm (Sweden), Dr. Kr. Grön (Norway), Dr. Lyder Borthen (Norway). During the conference a meeting of the British and Colonial delegates was arranged, and on the day following the last sitting of the official conference a further meeting of these delegates was held, at which the following statement and recommendations were prepared and unanimously approved:

We, the undersigned delegates from the British and certain Colonial Governments, unanimously approve the resolutions adopted by the Second International Scientific Conference on Leprosy, held at Bergen, August 15th to 19th, 1909. At a special meeting held by us on August 20th we agreed to the following additional resolutions:

1. Leprosy is spread by direct and indirect contagion from persons suffering from the disease. The possibility that indirect contagion may be effected by fleas, bugs, lice, the itch parasite, etc., has to be borne in mind. Leprosy is most prevalent under conditions of personal and domestic uncleanliness and overcrowding, especially where there is close and protracted association between the leprous and non-leprous.
2. Leprosy is not due to the eating of any particular food, such as fish.
3. There is no evidence that leprosy is hereditary; the occurrence of several cases in a single family is due to contagion.
4. In leprosy an interval of years may elapse between infection and the first recognized appearance of disease. It is a disease of long duration, though some of its symptoms may be quiescent for a considerable period and then recur.
5. The danger of infection from leprous persons is greater when there is discharge from mucous membranes or from ulcerated surfaces.
6. Compulsory notification of every case of leprosy should be enforced.
7. The most important administrative measure is to separate the leprous from the non-leprous by segregation in settlements or asylums.
8. In settlements home life may be permitted under regulation by the responsible authorities.
9. The preceding recommendations, if carried out, will provide the most efficient means of mitigating the leper's suffering and of assisting in his recovery, and at the same time will produce a reduction and ultimate extinction of the disease.

—ARTHUR NEWSHOLME, M.D., MALCOLM MORRIS, K.C.V.O., Delegates of the British Government; R. J. BULL, M.D., Delegate to the Commonwealth of Australia; CHARLES F. K. MURRAY, M.D., Delegate for the Colonies of the Cape of Good Hope and Natal; GEORGE TURNER, Delegate from the Colonies of the Transvaal and Orange River; ALLAN PERRY, M.D., Delegate from Ceylon; J. E. GODFREY, Delegate from the Colonies of British Guiana and the Bahamas; B. GLANVILL CORNEY, Delegate from the Colony of Fiji.

This British statement, in the judgement of the delegates, embodies—when read in conjunction with the official resolutions of the Bergen Conference, published in the JOURNAL of October 16th—the line of administrative policy which it is desirable to adopt for the prevention of leprosy throughout the British Empire, so far as local circumstances permit.

AN International Congress of Pharmacy is to be held at Brussels, September 1st to 5th, 1910. The following is the programme of matters to be discussed so far as at present settled: (1) Study of the general principles of the titration of drugs and galenical preparations, with the object of promoting the international unification of methods of analysis applied to medicaments. (2) Study of the means of bringing about an international unification of the composition of reagents to help in the reading of pharmacopoeias and chemical works, and to facilitate analytical work. (3) Are there any measures that should be taken, either by professional bodies or by public authorities, or by both combined, for the regulation of the sale of antiseptic specialities, for the purpose of ensuring honesty in commercial transactions and safeguarding the interests of the public? (4) The necessity of including courses of macroscopy, microscopy, and chemistry of certain natural and pathological secretions, with their clinical significance, into the pharmaceutical curriculum. (5) The utility of the pharmacist making his own galenical preparations. (6) The regulation of the sale of specialities, laws relating thereto in different countries, countries in which there is and is not a system of discount, advantages and disadvantages of the different systems of regulations, and their results. (7) The creation of an international association of professional pharmaceutical bodies. (8) The utility and necessity of a strong representation of practising pharmacists on commissions entrusted with the elaboration of national codices and of an international pharmacopoeia. The organizing committee offers a prize for the best essay on the following questions: Details of the internal arrangement of a modern pharmacy and its dependencies, account being taken of the legal requirements of the country in which the pharmacy is situated. The competition is open to all members of the congress. The essays should reach the General Secretary, 12, rue Malibran, Brussels, on or before August 15th, 1910. They are to be authenticated by a motto corresponding to one in a sealed envelope containing the name and address of the writer. The award will be made on the judgement of an international jury. The prizes consist of two silver-gilt medals placed at the disposal of the jury by the Royal Society of Pharmacy, Brussels, and of certificates of honour. The result of the competition will be declared at the closing meeting of the congress.

THE AFTER-CARE OF FEEBLE-MINDED CHILDREN.

A conference of After-care Committees in connexion with the National Association for the Feeble-minded was held at Leicester on October 28th. There was a numerous attendance of delegates from all parts of the country. The morning sitting was presided over by Dr. Astley V. Clarke, Chairman of the Leicester After-care Committee, who briefly explained that the object of the organization was to keep in touch with young persons of both sexes whose intellects were subnormal, and who had been provided by the State with a modified form of education in special classes. Such State care extended only till the age of 16; hence the necessity for after-care committees to follow up the cases. Adequate care of this class was well-nigh impossible without increased powers of control and detention, and even if these were granted by the State, there would be need of voluntary workers to secure the best results.

Sir William Chance contributed a paper dealing with the growth of after-care committees and summarizing their returns; the number of cases reported on this year was 2,185, as compared with 1,373 in 1908 and 1,037 in 1907. He pointed out how the neglect of systematic supervision of the feeble-minded affected detrimentally the health of the community, and urged the need of the legislature enforcing two principles in dealing with them—uniformity and control.

Social Dangers of Feeble-mindedness.

Dr. G. H. Savage addressed the meeting upon "The social dangers of feeble-mindedness," commenting more particularly on a class of persons who are injurious to society and require some control because "they are partly bad and partly mad." Neglect of the feeble-minded as such tended not only to the misery of these unfortunates, but to the harm of the public at large, for they gravitated into remand homes, houses of detention, convict prisons, and criminal lunatic asylums, where they formed a considerable percentage of the inmates. Therefore they had evidence enough to justify society in protecting itself, and in protecting itself it must begin at the very root. If good were to be done in preventing the frequently recurring fatuous and irresponsible crimes and offences of mentally-defective persons, it must be by continuous observation and control, and, when necessary, by permanent detention.

Dr. Allan Warner, Medical Officer of the Leicester Education Committee, read notes on the "Home conditions of families where there is mental deficiency in one or both of the parents," plainly indicating that there are very good reasons why certain types of mentally-defective persons should not be allowed to become parents. When the heredity and environment of numbers of children were considered, it was not surprising that so many proved themselves useless members of society. Good hygienic conditions were essential for normal mental development, and where there was lack of parental care, want of personal control, and evil habits amongst the rest of the household, the only remedy seemed to be the removal of children from such detrimental home surroundings.

In the discussion that followed, Mr. C. J. Bond, F.R.C.S., Senior Surgeon to the Leicester Infirmary, described the problem as an eugenic one, and pointed out that the necessary social legislation to meet the case must be based on the investigation and classification of individual cases, such as was undertaken by the after-care committees.

Statistics.

In the afternoon Lady Frederick Brudenell-Bruce, President of the National Association for the Feeble-minded, took the chair, and papers were read by Mr. W. H. Dickinson, M.P., on "The feeble-minded in America," and by Mrs. Hume-Pinsent, of Birmingham, on "Compulsory *versus* voluntary methods." She pointed out that there were at least 66,000 mentally defective persons in urgent need of care, training, and control, and advocated speedy legislative action following the recommendations of the Royal Commission.

The Scope and Functions of the Colony.

Dr. R. Langdon-Down, in a paper on this subject, said that the Royal Commission on the Care of the Feeble-minded in its report devoted one chapter to the consideration of how to provide for chronic and harmless patients otherwise than in asylums. Among the various plans reviewed, some were more especially adapted to the case of persons of unsound mind. The methods which seemed more applicable to the case of the feeble-minded were family colonies, boarding out, and farm colonies, and he proposed to confine his attention mainly to the third of these methods, as being more calculated to meet the conditions of the problem before us in the large majority of cases. After describing the principal features of the colony system, he discussed the two features of this scheme, which seemed to be fundamental to its success and were mutually interdependent. The first was that it was essential that it should be on a sufficiently large scale and deal with considerable numbers. It was only in this way that employment could be found of a suitable kind, and in sufficient variety and amount, to meet the very varied capacities of the inmates of the colony. The larger the numbers in the colony the greater the facilities for proper grouping and classification on the varying grounds of age, sex, physical condition, mental capacity, capacity for hard manual labour of different kinds, trustworthiness, compatibility of temper and disposition. Moreover, it was this grouping of large numbers in one society that provided an element of variety and complexity of life which afforded opportunities of employment and usefulness which did not otherwise occur. Very different grades of defect could be successfully dealt with in one colony. Any one practically familiar with these cases must be aware that some of the best workers were those of comparatively low level of intelligence, and in some cases hardly capable of human speech; whereas some of those apparently more intelligent, owing to physical disability or unreliability, were of little value for industrial purposes. This plan of bringing together of different groups in one community, so that the more able might assist in the work of supporting the less able and infirm, and yet suitably classified for living purposes, all groups working together for mutual benefit, was a striking feature in the colony scheme in America. It was these characters which distinguished the colony from the institution on the one hand, and from the small and isolated home on the other. The institution was apt to be lacking in flexibility, adaptability, and scope for developing and adjusting itself to the great variety of conditions with which it had to deal, and was more likely to do for the inmates in a mechanical manner too much of what the colony system left for the inmates to do for themselves. Both the "institution" and the "colony" might be economical in providing efficient administration and management at a relatively low cost. The economy of the "institution" was more likely to be at the expense of the welfare of the inmates; whereas the economy of the colony should coincide as far as possible with their welfare, and should in addition utilize its members to the full. The small "home," on the other hand, involved more expense than the colony method, without any of the advantages of the corporate life of the colony, and made no provision for the future of its inmates, as they had to move on to make room for others; it did not provide for the permanent care which was so important an element in the problem. It must not, however, be supposed that industrial work of this kind was new to this country, either in the small homes or in the institution. For instance, Earlswood in the early Sixties established workshops for tailoring, matmaking, woodwork, and other industries, and built large farm buildings which were still in use. Darenth, Sandlebridge, Starcross, and other homes also were doing good work of this kind. It must be remembered that the mental defect was in itself a permanent condition, and that though some of the sufferers might be capable of earning a living or partially supporting themselves under favourable circumstances, none of them were capable of competing on equal terms with their normal fellows or of managing themselves or their affairs with ordinary prudence. From the first, and always if left to themselves in the world, they were out of harmony with their environment; their environment must be brought into harmony with them. The colony should aim to make life in the colony an end

in itself; once it had been decided that an individual was mentally stunted and a suitable person to join the colony, it should be possible to provide an appropriate mode of life for him there as long as he lived. If public opinion were once fully aroused to the justice and the importance of dealing comprehensively with the question, there would be an increased readiness among parents to prefer that their feeble-minded children should be recognized as such, and dealt with in this way, than to try to conceal the defect and let them rub along as best they might in the outer world. There would then be less likelihood of the colony being overweighted with the extreme cases of defect, and with the aged and incompetent. It was one of the conditions of success that the fairly able feeble-minded shall form the backbone of the colony, and there seemed now to be a greater readiness on the part of the public to recognize the need of special treatment for the milder cases of defect than ever before. If the American plan was followed, the colony would have an educational department—a residential school. The question arose, what should be the relation of the colony school to the special school, or the ordinary elementary school? Supposing that adequate provision were made in the colony the answer would appear to be that, if it was likely that the child would always be feeble-minded or defective, however slightly, then it was better that he should be dealt with from the start at the colony school. It was hardly possible to exaggerate the importance of the constant observation and control afforded by a residential school. This plan would have the advantage of reserving the special classes for the backward, the delicate, and the slow developing normal children who were a handicap to, and derived little benefit from, the ordinary class. At the same time it would relieve the special classes of all children incapable of ultimately returning to the ordinary school classes, or of taking their place in the world at the age of 16, and thus be a considerable saving of expense. Even if later the child sent to the colony school showed greater powers of development than were expected, the question of his future could be reconsidered before he came of age, and if he were then thought capable of taking his place in the world he would probably be much more fitted to do so than if under such doubtful circumstances he had left a special school at the age of 16. In the colony school the curriculum should be specifically devised to lead up to, and prepare for, useful colony life, only pursuing literary subjects where obvious benefit to the individual was likely to result therefrom. The training of the defective child should go on without intermission, and it should quite early be turned into the channel most likely to make him of economic value and industrially efficient in the sphere for which he was now destined. In descending the scale of mental defect the transition from the feeble-minded group to the imbecile group, and thence into the group of idiots, was made imperceptibly. Indeed it might be asserted that they scientifically all formed a single natural group. In so far as they had been separated in the Report of the Royal Commission, the definitions were avowedly based on rough and ready social criteria for practical convenience, and did not correspond to any scientific differences. Thus the distinction drawn between the feeble-minded and the imbecile depended on whether the individual was "incapable of earning a living," or "may be capable of earning a living under favourable circumstances." The words "may be" were particularly indefinite, and allowed of the possibility that the person "may not be," when he would fall under the definition of imbecile equally well. This vagueness and difficulty of definition corresponded with the actual facts: the line between the imbecile and the feeble-minded was almost impossible to draw. Experience in selecting cases for homes proved that it was considerably easier to distinguish the feeble-minded from the normal than from the imbecile, especially without the experience gained from day to day observation in a home.

To the question, Should the colony be organized so as to correspond to the natural facts, or have its scope limited according to some artificial division of this kind? Dr. LANGDON DOWN answered that, whatever the line of approach at first, in the long run the most complete and satisfactory solution would be to follow the example of some of the colonies in the United States, and allow each colony full scope to deal with the whole "mentally stunted" group. The colony was specially adapted by its structure to provide for cross-classifications and variations in the subgroups, whereas any attempt to cut the group in two introduced difficulties in practical organization, and did away with certain economic and social advantages attaching to the single colony. For instance, there was the importance of being readily able to make transfers of an experimental or temporary nature from one class to another, and the fact that there were many low grade imbeciles whose work was of industrial value, particularly if it could be fitted in with the work of others slightly more gifted, though they would not be suited to live under the same roof. Isolation in a separate custodial institution would not be doing the best possible for them, as it would hardly be practicable to provide the same facilities there as in the colony. On the economic side, the attempt to make the whole group as far as possible self-supporting could be carried out most fully by giving the more capable the opportunity of doing their share of service for the less capable, and this was best secured by residence of all grades in proximity to each other. For example, the roadways for all could be kept by one group, and the washing of the custodial department could be done by the colony laundry. Similarly, for such social gatherings as religious services or entertainments, it was better that there should be a certain meeting of extremes rather than a perpetual rigid separation into age groups and class groups; without such a blending the colony life would be artificial and incomplete. If that were true of the colonists, it applied in a similar way but with even greater force to the staff, to whom the complete isolation of custodial cases implied great hardship.

In the discussion which followed, Dr. E. ELLIS, Chairman of the Leicester Board of Guardians, laid stress on the subject of heredity, a factor which must be reckoned with in any satisfactory scheme of prevention, and Dr. CLIFTON, Alderman, Leicester, advocated the necessity of increased compulsory power in dealing with the mentally defective. In conclusion, a resolution, moved by Sir WILLIAM CHANCE, urging upon the Government the importance of immediate legislation on the lines of the report of the Royal Commission on the Care and Control of the Feeble-minded, was carried by the meeting.

THE ASSOCIATION OF PUBLIC VACCINATORS OF ENGLAND AND WALES.

ANNUAL MEETING.

THE annual meeting of this association was held at the Adelphi Hotel, Liverpool, on Friday, October 29th.

The RETIRING PRESIDENT (Dr. Drury, Halifax) occupied the chair during the transaction of the formal business of the meeting. In moving the adoption of the report he referred to the failure of the association so far to persuade the Local Government Board of the importance and justice of the often-repeated application for fixity of tenure of office. Several causes might have contributed to this failure. It might be that they had not gone about in the best way; the assistance of the British Medical Association, as representing the whole medical profession, might have been more extensively sought and relied upon. In this matter the Local Government Board could not be blamed entirely. The Departmental Committee of the Local Government Board actually did adopt the suggestion, and recommended that fixity of tenure of office should be granted. In view of the opposition of a small but active band, means must be taken to satisfy politicians that vaccination was a good thing, and was a necessity for the State. If that were not done, no efforts would bring the goal nearer.

Dr. BRASSEY BRIERLEY (Manchester), who seconded the adoption of the report, said that medical officers of health had never ceased to worry the Local Government Board for fixity of tenure, and had succeeded in making the Government believe it could not do without them. He advised that every association of medical officers under Government control in the country should coalesce and go to the Government and say they must have fixity of tenure.

Let them coalesce or affiliate as they chose, but let them join up in one constitution, when they wanted the interests of either one section or the other promoted by Parliament. The resolution to adopt the report was then carried.

On the motion of Dr. A. E. Cope (London), seconded by Dr. Piggott (Shrewsbury), it was unanimously resolved to request the council to take steps during the coming year to approach the various medical organizations with a view to carrying out the suggestions made that day for securing fixity of tenure.

On the motion of Dr. Cope, the retiring President was thanked heartily for his services in the chair during the two years he had held office. All knew, he said, how extremely assiduous Dr. Drury had been in his work, and he did not think there was any one who had devoted so much energy and work to the cause of vaccination and public vaccinators as Dr. Drury had.

Dr. Hodgson (Rochdale) seconded, and the vote of thanks was carried with much applause.

On the proposition of Dr. Cope, seconded by Dr. W. J. Williams (Manchester), it was resolved that the best thanks of the Association be tendered to the British Medical Association for assistance given during the past year, and that a letter to that effect be communicated to the British Medical Association.

Dr. Bradshaw, one of the public vaccinators of the West Derby Union, was elected President of the Association for the ensuing year, and took the chair amid much enthusiastic applause.

Some Present Aspects of Vaccination and Revaccination.

Dr. E. W. Hope (M.O.H. Liverpool) read a paper with this title, in the course of which he said that when the enemy was at the gate all were on the alert for the means of defence, but in the long absences of alarm or danger the necessity for defence was apt to be forgotten or disregarded. He referred to the enormous influence upon the human race and upon all the affairs of life which had been exercised by vaccination and its controlling influence over small-pox in all civilized communities. The good work done by public vaccinators had not always received the recognition which it deserved as with some other branches of the public health service. The very success which had attended their work had obscured to some extent the necessity for its continuance. It was perfectly true that modern methods of sanitation, more especially administrative methods, had not been without a very marked effect upon the presence of small-pox. The Public Health Act, the compulsory notification of infectious diseases, had provided most valuable agencies in removing from a susceptible population many sources of infection, and they had enabled limitations to be placed upon the intercourse of infected persons with healthy ones, or the transmission or handling of infected clothing or things, whilst the hospital, with a vaccinated community of nurses and attendants—who themselves ran absolutely no risk whatever—had provided a suitable refuge for the patient. Modern administrative methods provided also that when necessary children might be kept from school, and workers from their work. Liverpool, exposed as it was to such frequent importations of small-pox, had special parliamentary powers to enable her to protect herself and the country from this disease. Trading, as she did, with every quarter of the globe, there was always the risk of importation of small-pox whenever that disease existed abroad. Thus during the last year or so, small-pox had been introduced from places as widely apart as Bombay, New York, Quebec, Valparaiso, Bilbao, various West African ports, Shanghai, and elsewhere. But these measures had their limitations, and the sheet anchor of protection was, and must remain, vaccination and revaccination at or about the age of 10 or 12 years. In none of the cases of late years in which small-pox had been imported here had extension occurred, but these happy results could not, of course, always be expected. In Liverpool vaccination, revaccination, or isolation was done voluntarily; throughout Germany compulsorily; but the primary and secondary examinations were carried out throughout Germany far more rigorously and far more efficiently than was done in this country, and the Germans reaped the reward in two ways. The various towns or other communities were not put to the many difficulties and great expense that they had to incur in this country in connexion with the upkeep of separate small-pox hospitals. In this country every community, practically, was burdened either wholly or with its share of the cost of maintenance of such an institution. In Germany separate small-pox hospitals were not provided, except in rare cases. Germany, with a population almost twice as large as that of England, had during a period of twelve years—from 1891 to 1902—only 600 deaths from small-pox, whilst in England and Wales, with a population not much more than half as large as that of Germany, 6,761 deaths from small-pox—more than ten times the number—occurred during the same period. Figures relating to the condition as to vaccination amongst school children in this city and, no doubt, elsewhere, showed that out of a large number of children from 12 to 14 years of age, in round numbers 4 per cent. are unvaccinated; but out of a large number of children from 3 to 7 years of age, in round numbers 8 per cent. are unvaccinated, showing that of recent years there was a larger proportion unvaccinated than was formerly the case. A surprising amount of ignorance existed amongst the poorer parents as to the objects of vaccination, and it was not a matter of wonder, therefore, that the elder children on leaving school were almost universally ignorant of the objects of vaccination. It was unfortunate that a few medical practitioners were still satisfied to give a certificate of successful vaccination when only one insertion was made. The proceeding was a popular one with many parents, but it had the misfortune of giving but a very imperfect protection to the person so vaccinated, and the unfortunate occurrence of small-pox in such a poorly protected subject was seized hold of with the object of discrediting the value of vaccination. However much this neglect was to be deplored, it did not appear to him that any efforts at compulsion were likely to prove of value, but every educative means should certainly be had recourse to to enlighten those who had charge of young unvaccinated children as to the needs of the case.

After discussion, in which a number of members took part, a hearty vote of thanks was accorded to Dr. Hope.

Annual Dinner.

The annual dinner of the association was held in the evening at the Adelphi Hotel, the President, Dr. Bradshaw, in the chair.

After the usual loyal toasts, Dr. Cope proposed "The Association of Public Vaccinators." The association, he said, had failed to accomplish the main object which called it into existence, but he had noted that whilst on the way to accomplishing its original object it had come across other important objects, many of which had been realized. The association had done a great work, and he strongly advocated the educating of the public in this matter.

Dr. Drury, in responding, observed that the attack which was being made by the enemy was in reality not an attack upon vaccination itself, but was in essence and substance an attack upon the medical profession and medical science. At the recent Antivaccination Conference held in Southport there was abundant evidence of this in the speeches. A clergyman, who had qualified for the antivaccination platform by an article in his parish magazine attacking the medical profession, was invited to that conference to deliver a further attack. This was duly reported in the press, and constituted the most bitter and uncharitable attack on medical men he had ever read. It was their duty to protect themselves from those outrages, and the association had that day adopted a report which counselled a further extension of effort in the direction of correcting misrepresentation.

The toast of "The Guests of the Association" was proposed by Dr. Isaac Holmes (Liverpool).

Dr. S. Monckton Copeman, F.R.S., in replying, declared that it was not likely there would be the opposition to vaccination if only the public could be educated up to the point of appreciating its value. He was convinced that not only amongst the lower classes, but also in the upper classes, there was a great want of knowledge of the subject. The members of that association, above all others, had the opportunity of inculcating that knowledge. Their work as public vaccinators was most important and onerous. He was glad to have had the

opportunity of putting to scientific proof that, contrary to the suggestion of the antivaccinators, one disease could cope with another, and to prove definitely that the reason why vaccination was a really effective protection against small-pox was because it was really derived from that disease itself.

Dr. GLYNN (Liverpool), who also responded, said that in addition to educating the public they had to deal with stupidity, prejudice, and idiocy. They must educate the Government. They had an illustration of that in regard to hydrophobia.

Professor RONALD ROSS (Liverpool), also responding, urged that they wanted a more fighting spirit amongst the medical profession. More funds were also required for scientific research.

The PRESIDENT, proposing "The Health and Poor Law," asserted that the Poor Law, through its officers, the public vaccinators, had a great deal to be grateful for to the public health administration in the country.

Dr. HOPE, in response, paid a high tribute to the work which had been done in the past by the Poor Law guardians, the parent of the public health service, from whence came the germ of modern preventive measures. He recognized what an enormous amount of work public vaccinators had done for the public health. He hoped the day was not far distant when the work of the public vaccinators would be more officially associated with the public health service.

Mr. HARRIS P. CLEAVER, Clerk to the West Derby Union, also responded.

The toast of "The President" was proposed by Dr. DRURY.

Dr. BRADSHAW replied, expressing his thanks for the honour which had that day been conferred upon him. The public vaccinators of the West Derby Union had always been staunch supporters of the association, and he felt that in selecting him honour was intended for his colleagues also, from whom he had received much assistance in making the arrangements for the meeting.

The musical programme, which contributed greatly to the enjoyment of the evening, was of exceptional excellence, and the solos throughout were kindly contributed by amateurs. Mrs. Drury (Halifax) and Mr. George Barnett (Liverpool) contributed delightful songs and a duet. Dr. Grossmann played two 'cello solos in most artistic style, and Dr. Pethick (a member of the association) enlivened the proceedings with several thoroughly amusing and topical humorous songs.

PROPOSED AMENDMENT OF THE MIDWIVES ACT.

THE Manchester Corporation has, on the advice of the Midwives Supervising Committee, caused the following letter to be addressed to other local supervising authorities in large centres of population:

Public Health Office,
Town Hall, Manchester.
October 27th, 1909.

Dear Sir,—

REPORT OF DEPARTMENTAL COMMITTEE *RE* MIDWIVES ACT, 1902.

At a meeting of the Midwives Supervising Committee of this city held on September 30th, 1909, the report of the Departmental Committee appointed to consider the working of the Midwives Act, 1902, was submitted, and I am directed to forward you the result of their deliberations.

The first section considered was that relating to the constitution of the Central Midwives Board (see paragraph *d* (1), page 20 of report). This paragraph contains a recommendation that the number of members should be increased to twelve by giving an additional nominee to the Lord President of the Council, and a representative each to the Local Government Board, the British Medical Association, and the Society of Medical Officers of Health. Also that the representation of the Royal British Nurses' Association should be discontinued. The Midwives Supervising Committee are unanimously of opinion that there should be a municipal representative, and accordingly passed the following resolution:

That in the opinion of this Committee the Municipal Corporations Association should be represented on the Central Midwives Board, and that a copy of this resolution be forwarded to the Lord President of the Privy Council, the President of the Local Government Board, the Chairman of the Central Midwives Board, and the President of the Municipal Corporations Association.

Attention was next directed to the recommendation (paragraph *b* (2), page 20) that "the Poor Law authority should be responsible for the payment, and should be empowered to charge the fee paid as 'relief on loan' to the patient." Provision for the payment of such fees in Manchester is made under Section 133 of the Public Health Act, 1875. The arrangement is that a fee of £1 1s. for emergencies under Rule E 19 (3), and also for secondary *post-partum* haemorrhage, and 5s. for contingencies mentioned in Rule E 19 (4) (1, 2, 3, 4) is paid, providing that the income of the family does not exceed a certain scale. For a small annual payment the District Provident Association investigates and reports as to the income of the family concerned. This report, along with the application stating the character of the emergency and the procedures adopted by the medical practitioner are submitted to a sub-committee, consisting of the medical members of the Midwives Supervising Committee—that is, four members of the City Council and four co-opted medical practitioners. On their recommendation the fees are paid or disallowed.

This arrangement works very satisfactorily, and the Committee consider it to be a better method than payment through Boards of Guardians.

It may be remembered that in the evidence submitted to the Departmental Committee on behalf of the British Medical Association they expressed the opinion that of the two methods of payment that afforded by Section 133 of the Public Health Act is the best. They also expressed the opinion that the machinery of the Poor Law, as at present administered, is not yet adapted for providing prompt and efficient medical assistance in cases of the kind under consideration.

The Committee also lay stress upon the hardship imposed upon certain families by the occurrence of unforeseen emergencies subjecting them to what they regard as pauperization.

The following resolution was passed:

That in the opinion of this Committee the fees of medical practitioners called in under the Midwives Act should, as far as practicable, be paid by the Local Supervising Authority, and not by the Board of Guardians.

These resolutions were approved by the City Council on October 6th, 1909.

The further consideration of the report of the Departmental Committee was deferred.

The Chairman of the Midwives Supervising Committee (Councillor Dr. Chapman) will be obliged if you will direct the attention of your Sanitary Authority to these specific proceedings, so that if the recommendations contained therein meet with approval they may take such action as they may consider desirable.

Yours faithfully,
(Signed) JAMES NIVEN,
Medical Officer of Health.

We append for convenience of reference the passages in the report of the Departmental Committee, to which reference is made in the above letter, together with the text of Section 133 of the Public Health Act, 1875:

Report.

Recommendations (*b*) (1) A secure expectation of payment should be given to a medical practitioner summoned on the advice of a midwife in a case of emergency. (2) The Poor Law authority should be responsible for the payment, and should be empowered to charge the fee paid as "relief on loan" to the patient.

Recommendation (*d*) (1) Constitution of the Central Midwives Board: (i) The number of members should be increased from nine to twelve by giving an additional nominee to the Lord President of the Council and a representative each to the Local Government Board, the British Medical Association, and the Society of Medical Officers of Health. The member appointed by the Incorporated Midwives Institute should in future be a certified midwife instead of a medical practitioner, and the representation of the Royal British Nurses' Association should be discontinued.

Public Health Act, 1875.

133. Any local authority may, with the sanction of the Local Government Board, themselves provide, or contract with, any person to provide a temporary supply of medicine and medical assistance for the poorer inhabitants of their district.

It may be useful to recall that the President of the Local Government Board in reply to a question addressed to him in May, 1908, said that the guardians were authorized by the Poor Law Amendment Act, 1848, to pay for any medical assistance rendered to a poor person on the happening of any sudden illness although no order had been given for the same by the guardians of any of their officers or by the overseers. He held that under this provision the guardians might pay a fee to any medical man called in on the advice of a midwife to attend a woman in childbirth in any case of difficulty. He added that the Board had not power to alter this provision so as to make it compulsory.

It may be convenient to quote the words of the Act to which Mr. Burns referred, 11 and 12 Victoria, Cap. 110, Section II, enacts:

It shall be lawful for the guardians of any union, if they think proper, to pay for any medical or other assistance which shall be rendered to any poor person on the happening of any accident, bodily casualty, or sudden illness, although no order shall have been given for the same by them or any of their officers, or by the overseers, and to charge the same to some one parish in the union, or to the common fund of the union, according as such parish or union would have been liable for the ordinary relief of such poor person; provided that nothing herein contained shall exempt the guardians of the union or parish, or their officers, or the overseers of the parish in which such poor person shall require relief by reason of such accident, bodily casualty, or sudden illness, from their liability to supply the requisite relief to such poor person whilst in such union or parish.

Section VIII provides:

That the guardians of any union shall be entitled to obtain orders of maintenance upon the relations liable under any statute now in force to maintain any poor person.

And provides further that:

All relief to be granted by the guardians to any pauper upon loan, and which shall be chargeable to the common fund of the union, or to any parish therein, may be recoverable in the county court or other court for the recovery of small debts.

LITERARY NOTES.

A VOLUME entitled, *Bibliography of Trypanosomiasis. embracing Original Papers published prior to April, 1909, and References to Works and Papers on Tsetse Flies, especially Glossina palpalis, Rob.-Desv.*, compiled by C. A. Thimm, and issued under the direction of the honorary managing committee of the Sleeping Sickness Bureau, will be published in a few weeks. Dr. Arthur G. Bagshawe, Director of the Sleeping Sickness Bureau, states in the preface that he believes the work contains an almost complete list of references to the published works on sleeping sickness and the trypanosomiases of man and animals from 1803 to March 31st, 1909; it includes also references to recent papers on the tsetse flies. The arrangement is by authors in alphabetical order, the papers being given again under the names of the journals in which they appeared. Against each original reference is an index number. A subject index will be prepared indicating the numbers to be consulted for the various subjects (sleeping sickness, nagana, mal de Caderas, the rat trypanosome, dourine, trypanosomes of birds, trypanosomes of fishes, chemo-therapy, *Glossina palpalis*, and the like), and will be forwarded to subscribers as a supplementary pamphlet. The references subsequent to March, 1909, are contained in No. 6 of the *Sleeping Sickness Bureau Bulletin*, and in following numbers.

To the *West London Medical Journal* for October Mr. C. B. Keetley contributes some interesting historical notes on the West London Hospital and people connected with it. Speaking of Mr. Bowater J. Vernon, the ophthalmic surgeon, Mr. Keetley says he used to relate how, when he was assisting the late Mr. Critchett, Sir William Gull would bring fashionable patients to that great ophthalmic surgeon. "At the same time," he says, "Vernon would give a dryly humorous account of the vigilant manner in which the illustrious physician would take care that the eye surgeon should revolve only on his own orbit—that is, the patient's. When it came to the cheek or the nose, 'Thank you, that is my affair.'" This reminds one of Mr. Dooley's account of the scrupulous manner in which doctors of the present day are expected not to move their neighbour's landmarks. "Hinnessy" consults a physician, and the following dialogue ensues:

"'Tis ye'er heart," says he. "Glory be," says I; "what's the matter with that ol' ingine," says I.

"I could tell ye," he says, "but I'll have to call in Dock Vinthricle th' specyalist," he says. "I ought'nt to be lookin' at ye'er heart at all," he says. "I niver larned below th' chin, an' I'd be fired be the Union if they knew I was wurrukin' on the heart," he says. So he sinds for Dock Vinthricle, and th' Dock climbs me chest an' listens, an' then he says, "They'se somethin' th' matter with his lungs too," he says.

Bellows must therefore be sent for. Bellows in turn insists that "Dock Lapporatteny" must be summoned and so the patient passed from one to the other, like a football, till he is kicked through the goal.

The *Pharmaceutical Journal* of October 30th contains extracts from the *Plymouth and Dock Telegraph* of March 19th, 1808. As our contemporary says, a perusal of these makes it clear that present day makers of proprietary medicines are really almost modest persons compared with their predecessors of a century ago. One advertiser informs all whom it may concern that he has just received a large supply of "Robberd's Improved Balsam Elixir or Cough Drops," on the virtues of which he enlarges as follows:

There cannot be too much said in praise of this medicine, as experience in almost innumerable cases has proved it the most extraordinary and beneficial discovery ever made; it is a certain, efficacious, speedy, and easy cure for coughs, colds, asthma, and consumption. Not an instance has occurred, having been taken by nearly 60,000 patients annually, where it has been known to fail to relieve the above complaints. So extraordinary are its virtues that even though the patient be ever so emaciated or reduced, after having tried every medical assistance to no purpose, it will act as it were a charm, and instantly relieve the most inveterate cough, at the same time give freedom to respiration, and promote gentle expectoration, strengthen the whole debilities, and procure the refreshing comforts of rest and sleep.

Bald heads were then, as now, the objects of special attention on the part of nostrum sellers. It seems that in 1808 "the Royal family and gentlemen in the fashion" used "Prince's Russia Oil" for moistening the hair when dressing, and that "several gentlemen who were bald have declared after using the Russia oil regularly for three months, the bald place became covered with hair." Another advertisement warns sufferers that if they are not cured it will be their own fault:

Reader! blame thyself if thou be ill henceforth, or if thy disease be not vanished!!! Just imported from the Continent, a medicine for the prevention and infallible cure of all degrees of a certain disorder.

This, says our contemporary, is recommended as infinitely superior to other remedies, which are described as "unwarrantable quackery." We may say of quackery what was said of French governments: *Plus ça change, plus c'est la même chose.*

We have received the first number of the *Local Government Review*, which claims to be the pioneer in a hitherto unbroken field. "It is the first *review* devoted exclusively to the adequate and impartial treatment of the great range of subjects classed under the term 'local government.'" How large is the scope of our new contemporary may be gathered from the list of the subjects which are the *farrago libelli*. "Public health, education, housing, the relief of distress; the care of the sick, the aged, and the feeble-minded; unemployment, the provision of allotments and small holdings, highway administration, public libraries, rating and assessment, public service undertakings, the protection of public rights of way, and the preservation and control of commons and open spaces—these are some of the great and important questions with which local government is directly concerned." All this and much more the new periodical takes for its province. Among the principal contents of the first number are the following articles: The Afforestation of Commons, by Sir Robert Hunter, C.B.: The Impending Revolution in English Local Government, by Mrs. Sidney Webb; German Municipal Government, by Mr. W. Harbutt Dawson; and The Unification of the Public Health Service, by Dr. H. R. Kenwood. The *Local Government Review*, which is published monthly by Messrs. Simpkin, Marshall, Hamilton, Kent, and Co., Limited, is excellently printed, and seems likely to fulfil a most useful function.

In the October number of the *Caledonial Medical Journal* Sir Dyce Duckworth gives an account of his grandfather, William Nicol, M.A., M.D., of Stonehaven. Born at Brownieshill, in the parish of Kinneff, Dr. Nicol studied at Aberdeen, becoming Master of Arts in 1782 and Doctor of Medicine in 1803. In the meantime he had served in the Royal Navy as surgeon's mate. Later he was appointed Surgeon to H.M.S. *Leander*, and saw a good deal of life at Lisbon, Gibraltar, Naples, Malta, and elsewhere. He recorded his experiences in a diary and in letters to his father, which have been preserved. He

retired from the navy in 1792 after about seven years' service, and probably settled in practice at Stonehaven. In 1794 he married Margaret Dyce, daughter of a merchant and burgess at Aberdeen. He continued to practise at Stonehaven till his death in 1827, a period of thirty-four years. He continued his habit of diary keeping, and a portion of these records, covering from 1802 to 1804 are in the hands of his distinguished grandson. It shows that he must have led a strenuous life, in full practice of medicine, surgery and midwifery. He was surgeon to the militia and to a corps of volunteers embodied at that time of European disturbance. He made his rounds on horseback. The famous athlete, Captain Barclay, of Ury, Stonehaven, who walked a thousand miles in a thousand hours, was his patient. Dr. Nichol practised inoculation with cow-pox very extensively, and no mention is made of untoward results. He was popular in the town and neighbourhood, and often dined at the houses of the local magnates of Ury and Fetteresso. On one occasion he restored to life a youth who had been overcome by the fumes of burning charcoal, and Sir Dyce Duckworth has in his possession the gold medal presented to his ancestor by the Royal Humane Society on the occasion. Dr. Nicol was evidently a man of strong character, fitted for energy and action. Sir Dyce Duckworth says that, as a firm believer in hereditary transmissions and atavism, he imagines that his own inherited predilection for matters both medical and naval led to his joining the medical service of the navy for a short period at the outset of his career. Dr. Nicol's only son, James Dyce, after a career in Bombay, acquired the estate of Ballogie and others, and sometime M.P. for Kincardineshire. A son of Dr. Nicol's second daughter, General Sir Alexander Low, K.C.B., rode in the Balaclava charge, and afterwards commanded his regiment, the 4th Hussars. Sir Dyce Duckworth concludes by saying that he hears with some apprehension of developments in Stonehaven, and he expresses a pious hope that these may not lead to its vulgarization as a holiday resort. He regards it as a duty to posterity to preserve such little towns in their pristine simplicity, while having due regard to modern sanitation, and he deprecates the desecration of the speculator and the abominations of the jerry builder.

Medical News.

THE first scientific meeting for the session of the Zoological Society of London will be held in the Society's rooms at 3, Hanover Square, on Tuesday next, at 8.30 p.m.

THE dinner of the past and present students of the Royal Dental Hospital of London will be held at the Hotel Metropole on Saturday, November 20th, when Mr. C. F. Rilot will take the chair.

THE students' annual dinner of the National Dental Hospital will be held at the Trocadero Restaurant, Piccadilly, W., on Friday, November 19th, under the presidency of Sir Thomas Barlow, K.C.V.O.

THE opening meeting of the one hundred and fifty-sixth session of the Royal Society of Arts will be held on Wednesday, November 17th, at 8 p.m., when Sir William White, K.C.B., F.R.S., Chairman of Council, will deliver an address on an Imperial Navy.

ON the occasion of the opening of the winter session of the Central London Throat and Ear Hospital, Gray's Inn Road, on Monday next, at 4.30 p.m., Mr. Charles Ballance, M.V.O., will deliver an address on the lesson to be learnt in London from the history of the mastoid operation.

THE annual meeting and dinner of the Glasgow University Club of Manchester and district will be held at the Queen's Hotel, Manchester, on Tuesday, November 16th, when Sir Henry Craik, M.P., Sir Hector Cameron, and Dr. G. S. Middleton will be present. Further particulars can be obtained from Mr. D. Richmond, 176, Drake Street, Rochdale.

AT a meeting of the council of the University of Birmingham on November 3rd, Mr. J. Sholto Cameron Douglas, M.A., M.B., B.Ch.Oxon., was appointed lecturer in pathology and bacteriology; Mr. Leonard Doncaster, special lecturer in heredity and variation; Mr. Edward Bach and Mr. Samuel Lewis Graham, M.B., prosectors of anatomy.

THE long expected has at length happened, the Lord Mayor of the City of London having issued last week an appeal for assistance on behalf of St. Bartholomew's Hospital. The annual working deficit is now some £12,000. The probability of such an appeal becoming imperative was pointed out in a review of the financial position of hospitals in the metropolis, published in the JOURNAL early last year. The institution, with a history of 800 years' work behind it, is one of the most famous and scientifically successful hospitals in the kingdom, and its appeal will no doubt meet with a ready response.

THE thirteenth annual conference of the Parents' National Education Union will be held in Birmingham on November 15th and the four following days. The first meeting will take place in the great hall of the university, under the chairmanship of the Earl of Lytton, when an address will be given by Sir Oliver Lodge. On the following day Miss Helen Webb, M.B., will read a paper on environment in relation to nervous stability. Other subjects to be discussed will be social work for girls at leisure, how to interest young people in art, and co-education of boys and girls.

ON October 19th the weekly board of Newark Hospital held an inquiry into an accusation recently made against the institution in the *Newark Advertiser* by the squire of a neighbouring village. The allegation was to the effect that a woman sent by him to the hospital had been wrongfully refused admission, and that life had thus been endangered. The inquiry showed that all the officials of the hospital, including the house-surgeon and the matron, had acted according to its regulations and also wisely, and that it was untrue that the patient had in any wise suffered in health from the refusal to admit her. On examination there proved to be nothing the matter with her beyond being very dirty and of considerable age. She was therefore inadmissible as a case of urgency and equally inadmissible as an ordinary case, because no letter of recommendation stating that she was a fit subject for hospital treatment and signed by a medical man was sent with her. Instead of sending her away forthwith the house-surgeon brought the case to the notice of the Poor Law authorities; but the relieving officer, finding she did not belong to a village within the union, nor appear to be in need of indoor treatment at all, refused to deal with the case. The patient was then, after being given tea and carefully wrapped up, sent back home in the same vehicle and with the same companions—a woman and the squire's groom. Within forty-eight hours she was also examined by the Poor Law medical officer of the district, who also found nothing the matter with her. The board is to be congratulated on having met this charge boldly and promptly by a public inquiry.

AT King Edward VII Hospital, Windsor, two interesting events took place recently—the opening of a library and the unveiling of a portrait of Dr. W. B. Holderness, the first President of the Windsor and District Medical Society. Dr. Francis Hawkins (Reading), President of the society, who occupied the chair, said that about a year ago one of their members, Mr. Tippets, of Staines, made a suggestion that books should be circulated amongst members, and expressed a wish that the society should have a library. At that time such a scheme seemed almost impossible. But at their last annual dinner Dr. Hurry, President of the Reading Pathological Society, spoke of the desirability of that society having a library. Dr. Holderness at once came forward with a generous gift of 10 guineas. Then the Committee of King Edward VII Hospital placed a room in the hospital at their disposal. By this means and by a grant of £20 from the funds of the society, a possibility had now become a reality. A library committee consisting of the Treasurer, Mr. Gooch, Dr. Holderness, Dr. Norris, senior surgeon to the hospital, Mr. Tippets, Dr. Spurrier, and Dr. Elgood, was formed, and contributions in the form of books and money began to come in. The company then proceeded to the new library, and Sir Richard Douglas Powell, having declared it open, unveiled the portrait of Dr. Holderness. On returning to the meeting room, Sir Richard Douglas Powell said he thought the library furnished another link in the association of all those who were practising in the district, and rendered their ethical relations happier; it was one of the obligations of a society like that to bring men into touch with one another—in larger sympathy with one another in their work and in their ethical relations. He also thought the formation of a library brought out the sympathy and generosity of many people. Sir Richard Douglas Powell then presented to the library a copy of the facsimile executed under the auspices of the Royal College of Physicians of London, of the diploma presented to William Harvey at Padua at the beginning of the seventeenth century.

British Medical Journal.

SATURDAY, NOVEMBER 6TH, 1909.

THE ANNUAL MEETING, LONDON, 1910.

In our last issue we were able to announce in brief terms that the next Annual Meeting of the Association will be held in London in July, 1910. Each autumn it is our duty to give notice of the place of meeting for the following session, and the congratulations which in the past it has always been possible to offer to members of the Association on the acceptance of the invitation from the city to be visited have never yet been otherwise than justified by the event. The acceptance of the present invitation that the Association should again, after fifteen years' interval, hold its annual meeting in the metropolis, will, we are confident, prove a matter of very special congratulation. Although the interval is not a very long one in the life of an association such as ours, and is, as a matter of fact, a little shorter than that which elapsed between the last London meeting and its predecessor, it must be recognized that within this period changes of considerable importance have taken place in the Association as well as in the great city which is to receive it next July.

Those whose duty it will be to organize the reception will doubtless at once appreciate the much stronger ties subsisting between the Association in the United Kingdom and its rapidly-growing Branches and Divisions in distant parts of the Empire than existed when the last London meeting was held. A meeting in the metropolis would seem to be a fitting opportunity to emphasize the Imperial aspect of the British Medical Association. No other city of the Empire, however attractive in other ways, could, perhaps, expect to be as successful as London in bringing men from the uttermost parts of the earth, and thus providing an opportunity for full discussion of the medical problems which, while, as to fundamental principles, essentially similar, must yet present varying aspects in different places. A mutual understanding of these similarities and differences can alone secure the solidarity of our imperial professional interests. We confidently look forward to the London meeting to demonstrate to our Colonial brethren and all other fellow-subjects of our King that it is possible for a single Association to provide at the same time the force that can be obtained by union and the elasticity which can be secured by an intelligent appreciation of the different circumstances in different parts of the Empire.

Within the last few years London has been the seat of the interchange of courtesies between foreign and British medical men to an extent in advance, we believe, of anything which took place in the last generation. Following upon the memory of these agreeable occasions, we may confidently expect a ready response to the invitations which will naturally be addressed to medical men in Europe and America, and possibly as far afield as Japan. The annual meetings of the British Medical Association have always been honoured by the presence of distinguished foreigners, but the numbers attending the 1910 meeting will probably exceed previous records, and be a striking instance of the power of science—especially medical science—to do away with all barriers of race and creed.

Although the Meeting of Representatives of the Association—the parliament of the medical profession in Great Britain and Ireland and the dominions beyond the seas—has on one or two former occasions been held in London, next year will be the first occasion in which it will have been held in the metropolis as part of the annual meeting and in close association with all the other activities connected with this gathering. Thus will be afforded a good opportunity for the profession generally to become acquainted with the details of this impressive meeting at which nearly 200 delegates from the various Divisions of the Association exchange views and endeavour to arrive at conclusions designed to increase the profession's power for good.

It may be expected that of the members and visitors who will register at the annual meeting in 1910 a considerable number will visit London again for the first time since the meeting under the presidency of Sir J. Russell Reynolds in 1895. Still more will they, for the first time since that date, be officially visiting medical London. Some attempt may perhaps be made next year to indicate the progress which has been made in medical London during the last fifteen years. Visitors will, we are confident, be struck by the remarkable progress in many directions. The inauguration of a teaching university for London, as opposed to a mere examination board, is an event which has occurred in the interval, and its results—a mere beginning it must be admitted—will be plainly observable. Many of the London hospitals have been almost transformed during the last fifteen years, and it is a common complaint of former alumni revisiting their medical schools that the additions and alterations render their old haunts unrecognizable. London has this advantage over all other cities which have entertained the Association, that the number of its resident medical men is actually in excess of the number who come from outside to attend the annual meeting. The possibilities of personal hospitality are, therefore, very great, and will, no doubt, be made a special feature of the forthcoming meeting.

Specialization in medicine has made great strides in fifteen years, and many more Sections will be required to deal effectively with all interests than were found necessary at the last London Meeting.

The members of the Metropolitan Counties Branch are, as we are all aware, fully alive to the opportunities and responsibilities of a metropolitan meeting. In Mr. Butlin, as President-Elect of the Association, they have an ideal chief, whose infectious enthusiasm will permeate the numerous band of workers which is already being organized in order to secure that the London Meeting in 1910 shall be a success.

THE CONQUEST OF THE TROPICS.

In a discussion which took place at the Royal Geographical Society eleven years ago, Dr. (now Sir Patrick) Manson expressed a firm belief in the possibility of tropical colonization by white races.[1] The direct causes of 90 per cent. of tropical diseases were, he said, living organisms. To kill these was simply a matter of knowledge and the application of

[1] British Medical Journal, April 30th, 1908, p. 1168.

that knowledge—sanitary knowledge, with its practical outcome in sanitation. Some months later Mr. Benjamin Kidd, from the *a priori* view of the armchair philosopher, peremptorily declared that our future policy in regard to the tropics must be based on a frank recognition of the fact that the attempt to acclimatize the white man in the tropics was a blunder of the first magnitude. Prophecy is always dangerous, and this particular Sir Oracle must now—if oracles can ever admit error—recognize, if he has followed the development of the subject on which he made so confident a pronouncement, that, like David, he spoke in his haste. Professor Osler's address at the opening of the winter session of the London School of Tropical Medicine—a summary of which appeared in the JOURNAL of October 30th—was a magnificent justification of the forethought of the men—foremost among whom must be placed Sir Patrick Manson—who, through good and evil report, laboured to impress on their fellow-countrymen that the white man's burden could be lightened by knowledge of the causes which made it almost beyond his strength to bear, and whose efforts, made fruitful by the energizing genius of Mr. Joseph Chamberlain, ensured the foundation of the school. That school is in the true sense of the word the metropolis of tropical pathology; it is the mother city from which have sprung "colonies" in Liverpool, and also in France, Germany, the United States, and the Philippine Islands. As for results, the history of the Panama Canal alone is sufficient to show the futility of Mr. Kidd's ill-considered statement. Panama, as Professor Osler said, had been the white man's grave for four centuries. Saavedra dreamed of a canal in 1520; Raleigh, Drake, and Morgan the buccaneer, sailed westward in their quest of gold, and found in fever a deadlier foe than the Spaniard. For three and twenty years de Lesseps struggled to cut through the canal. The problem was much more one of sanitation than of engineering, and it was not till Colonel Gorgas of the medical department of the United States Army, applying the scientific knowledge of which the foundation had been laid by Laveran many years before, cleared the Isthmus of Panama of the enemies which carried within them the seeds of disease and death that a solution of the problem became possible. The deliverance of Cuba from the thraldom of yellow fever, which levied from it year by year a heavy tribute of human lives, is another striking proof of the fact that in knowledge and the application of that knowledge lies the secret of the conquest of the tropics.

By those interested in the expansion of our empire, and in the civilization of the many peoples who still lie under the shadow of ignorance and avoidable death, the London School of Tropical Medicine must always be looked upon with reverence as the cradle of modern effort in a direction as to the beneficial results of which there can be no dispute. To those who remember the incredulity and ridicule with which the preaching of the new crusade against tropical disease was received less than twenty years ago, the success which has already been achieved is nothing less than marvellous. The school has grown from very small beginnings, and this makes the completeness of its equipment at the present day all the more surprising. The place is full of life; there are to be seen officers of the various services whose sphere of work lies abroad, and representatives of many of the dependencies which are under the sway of the British Crown. Teaching goes on in the wards, the lecture room, and the large laboratory; while in smaller rooms research work in protozoology, helminthology, and tropical pathology is patiently pursued, too often under conditions of discomfort that must tend to interfere with efficiency.

It is clear to the most cursory observation that more room is urgently needed for laboratories. For this, in the first place, more ground is required. There is a site adjoining the school which would afford room for the expansion made necessary by the growth of its work. It is hoped that the Port of London Authority may see its way to grant the site. That this would be to the interest of the community is unquestionable in view of the important function which the School of Tropical Medicine is by its situation peculiarly fitted to discharge. It receives cases of disease occurring among the crews of ships entering the Port of London from all parts of the world; thus cases of plague, cholera, relapsing fever, and other infectious diseases are, as it were, trapped at the inlet. Enlargement of the institution to an adequate degree would undoubtedly strengthen the last line of defence against imported disease. There are other exotic diseases, such as beriberi, the elucidation of which in respect of direct etiology and contributory causes is highly desirable in the interest of all who go down to the sea in ships. Moreover, there are diseases, such as plague, that may be conveyed from animals to man, which require to be better understood. The neighbourhood in which the school is situated swarms with vermin of various kinds; and during the summer and autumn it is visited by a veritable plague of flies. The part played by these insects in the propagation of disease is still very imperfectly understood, but it is coming to be recognized that this is a factor that must be reckoned with, and it is of the utmost importance that its true value as a means of carrying infection should be exactly determined. Such scientific work—all of which, it must be borne in mind, has a direct practical bearing—it is the special function of the London School of Tropical Medicine to perform. It is as a sentinel standing at the entry of the Port of London; more than this, it is a highly skilled detective agency working for the prevention of harm to the community and for the discovery and extinction of possible evildoers. For these reasons it is to the interest not only of the Port of London but of the City of London and of the vast congregation of human beings who live within the area of London that the school should be placed in a position to do its work of safeguarding the population from imported disease as efficiently as possible.

Not only is more room wanted for the development of the work of the school, but money is needed if it is successfully to discharge its mission of usefulness. Science makes no appeal to the mob, and therefore it may be assumed that, if the Chancellor of the Exchequer were asked for money, he would say, as Pitt said of literature, "Science must take care of itself." We may be allowed, therefore, to urge again, as we have done before, that the School of Tropical Medicine has a claim not only on London, but on the whole country and on the empire. Successful colonization in the tropics depends on the white man's power of resisting the indigenous organisms that threaten health and life. The mere number of men who have perished in carrying the British flag over tropical lands and seas is appalling. And when it is remembered that the lives thus sacrificed have been those of the flower of our manhood, and that they have been lost in great part through sheer ignorance, shame must further embitter our cup of sorrow.

We have before us the examples of Greece and Italy to prove that disease is a powerful cause of national decay. We now know that malaria, which has made wastes of some of the most fruitful regions of the earth, can be prevented. There is every reason to believe that the other diseases which threaten our empire in one part or another can be combated with equal success by knowledge gained in the laboratory and in the ward, and the application of that knowledge in the forests and swamps of the tropics. To that end the Schools of Tropical Medicine are working with ever-growing hopefulness. The workers are there, and fields of research are opening all around. The one thing wanted is money. All honour to the Liverpool School of Tropical Medicine and to its liberal patron, Sir Alfred Jones. It has sent out more than twenty expeditions to study tropical diseases and the means of combating them. These expeditions have added largely to knowledge. The Liverpool and London Schools are working in generous rivalry. If the London School has not done so much in the way of research, this is because it is heavily handicapped in the race by want of funds. It has, indeed, a few liberal benefactors, but it has not the magnificent support which the Liverpool School enjoys. There is not the same corporate pride—the feeling expressed by the Romans in the words *Civis Romanus Sum*—in London that exists in smaller cities. If the people of London could be aroused to a sense of the direct personal interest which the study of tropical diseases should have for them, the School of Tropical Medicine—the very existence of which is unknown to most of them—would, we are sure, not be allowed to lag behind in research for the want of money. It will be a reproach to the centre of the world's trade if it allows any other city to rob it of the honour of the conquest of the tropics.

THE SIGNIFICANCE OF DARWINISM.

THE conception of evolution, as Professor Lindsay remarks in his Bradshaw Lecture (p. 1325), was present in the minds of scientific and philosophical speculators long before the birth of Darwin; we can find it adumbrated even in the dawn of serious speculative thought. The idea of evolution was familiar to Heraclitus and to Aristotle, and it can be traced through a succession of thinkers down to modern times. Amongst the comparatively recent precursors of Darwin Professor Lindsay mentions Dr. Prichard of Bristol, whose work, published in 1826, recognized the existence of organic evolution, discussed the influence of selection upon racial development, and distinguished between acquired and congenital characters as regards their capacity for transmission.

The conception of evolution was also familiar to many of the German philosophers. Amongst these the lecturer mentioned Kant; he might have added Hegel, one of Kant's most important successors in metaphysical speculation of the idealist school. Throughout Hegel's *Logic*, and indeed pervading the whole of his philosophy, the dominant conception is the progressive evolution of the higher forms of thought and reality out of the lower. Unfortunately Hegel was born before his time and did not live to see the era of modern biological science; had he survived half a century longer, biology would have provided him with a wealth of material wherewith he might have corroborated his ideas by concrete and convincing examples derived from vital phenomena. But when he wrote, the requisite scientific data had not been discovered, and he was compelled to express his conception of evolution in abstruse terms, borrowed largely from abstract metaphysics, with the natural result that much of what he did write is obscure. Hence his philosophy has not found much favour with modern exponents of the natural sciences. But, considering that he wrote before the dawn of the modern scientific age, he displays a marvellous insight into the fundamental principles of evolution, and his unconscious prescience of Darwinism is a valuable demonstration of the underlying unity between the fundamental laws of the empirical sciences and the more general principles which find their expression in the philosophical contemplation of reality as a whole.

"Darwin," says Professor Lindsay, "did not discover "evolution. He discovered its leading law, and by "a long series of observations, experiments, and "reflections, unparalleled in the history of science, "converted the brilliant guesses of earlier inquirers "into an assured truth and an established principle." The lecturer finds the secret of Darwin's success in the fact that he possessed in a supreme degree two faculties rarely developed to perfection in the same individual, "immense industry and accuracy in the "accumulation of facts, and a daring originality of "speculation, coupled with much caution in drawing "any final conclusions." At the present day the necessity for the laborious collection of data is recognized in all scientific work, but, as is sufficiently obvious in the overwhelming output of current medical literature, it is often difficult, if not impossible, to discern general principles amidst the chaos of detail. For this reason the lecturer calls special attention to the high place which Darwin assigned to theorizing and speculation in scientific work. "What "we need," he says, "is the illuminating generaliza-"tion, the daring hypothesis, to co-ordinate facts "hitherto out of relation with each other, to give "perchance to science a new *organon*, to light the "way to fresh fields of inquiry and discovery." Yes, undoubtedly this is a desideratum most fervently to be prayed for, and we wish Professor Lindsay had entered into the subject more fully.

The difficult problem that lies at the root of the matter is the task of discriminating between the use and the abuse of the "working hypothesis." Any fool can generalize, or enunciate a bold hypothesis, and one can hardly say that current literature does not present a plentiful crop of ambitious statements; the trouble is that such statements are rarely substantiated by adequate evidence. If, as not uncommonly happens, an investigator sets out with an enthusiasm for some particular "working hypothesis," he often tends to view his subject matter through coloured spectacles, seeing everything which lends colour to his hypothesis and unconsciously passing over such data as are not in harmony with it. This is a very common feature of research emanating from many of the famous schools of pathology. The investigator takes as his starting-point some particular principle which is part of the pathological doctrine laid down by the founder of the school, and endeavours to ascertain whether this principle is valid in the particular circumstances which he selects for investigation. His "working hypothesis" is the assumption that the principle *may* be valid; he emphasizes all the facts which come to light in support of this view, severely scrutinizes apparent discrepancies, manages to discover some reason why they "don't count," and

then proceeds to the conclusion that the principle *is* valid. Quite so; we strongly suspect from the first page of such articles that the conclusion was predestined. The author "must follow his master"; and in private conversation he is sometimes ingenuous enough to confess that he was not altogether unconscious of a desire to corroborate his chief.

Obviously, this sort of a "working hypothesis" is most decidedly not Darwinian. Then we have the class of workers who formulate their conclusions in the shape of "hypotheses" which are palpably of a more general nature than is warranted by the data brought forward in evidence. Generalizations of this type, which might be more properly described as "pious opinions," are, again, not of the sort which is likely to yield substantial progress in scientific theory.

Preferable to either of these types of research work is the investigation by the patient man who delights in the gymnastics of a skilful and accurate technique, records his facts because he knows they are true, and makes no pretence of drawing broad generalizations from them. At all events he has the genuine satisfaction of feeling that his data will be valid, as such' for all time, and that they may therefore provide something of the solid bricks and mortar to be utilized, when future material has accumulated in sufficient abundance, for building the solid edifice of a scientific principle.

But Professor Lindsay is not satisfied with such modest ambitions. He wants us to be great architects as well as good bricklayers. We wish we could be; and if only he will show us how, he will indeed advance the cause of science by leaps and bounds. Darwin was both, and so are some of his most distinguished successors; but to us of the ordinary rank and file genius has been allotted by a more niggardly stepmother, yet, we may hope, with the superaddition of some saving grace, born of the modest desire to do thoroughly such things as we are capable of doing. A good bricklayer is better than the architect of a house of cards.

THE MIND AS A THERAPEUTIC AGENT.

THE recent debate at the Harveian Society, a report of which appears at p. 1352, was interesting, but did not throw much new light on the subject. Every one will agree with Dr. Claye Shaw that when any method of treatment is brought to the notice of the medical profession by practitioners to whose statements weight must, owing to their personal character and proved knowledge, be attached, it is our duty to examine with impartiality the methods they recommend. Every one, too, who is capable of forming a judgement will agree that the influence of mind as a therapeutic agent makes itself felt chiefly by what is called "suggestion." The difficulty is that to the average man suggestion conveys no meaning but that which the word connotes in ordinary language—that is to say, an influence exercised on a person's mind by another person who tells him that he must, or must not, do this or that. Suggestion is, in fact, the basis of education; it has been practised on all of us—reinforced it may be by the application of more or less violent stimuli which help to impress the suggestion deeper on our minds—in the nursery and at school. Suggestion lies at the bottom of all forms of moral and religious teaching. But there is nothing more mysterious in it than the power exerted by a strong personality over one whose mind is open to its influence, spiritual or other. We gather that those who practise hypnotism have come to recognize this fact, for there was a general agreement that the hypnotic sleep which used to be thought an essential part of the process is unnecessary. This is a distinct advance, as the passes and other manœuvres used to bring on the sleep contributed greatly to bring hypnotism into discredit. That many diseases are cured by suggestion is unquestionable; but the questions what diseases are so cured, and how they are cured, remain unanswered. So called "functional" disease is obviously a favourable field for such treatment; but can any one draw an exact line of demarcation between functional and organic disease? All that can be said at present is that, as pathology becomes more and more an exact science, the domain of functional disease tends more and more to dwindle, while that of organic disease expands. There is no reason that we can see why the nervous system, if stimulated to act in the right direction, should not help the restoration to a healthy state of a tissue or an organ that is not damaged past repair. We have no difficulty in believing that ulcers that have a malignant aspect may be healed by the hope that comes from a potent suggestion. We have ourselves known of more than one case in which every clinical sign of malignant disease of the stomach was present, and in which a cure was effected by means that could only have derived their potency from suggestion. But has any one ever seen a limb made useless by damage to the nerve centres with which its muscular power is bound up, or a heart maimed by structural changes in its valves or walls, or a lung transformed into cicatricial tissue, or a cancer-eaten liver, restored to full efficiency by suggestion? Short of actual miracle, the thing is to the medical mind unthinkable. But there is a vast Tom Tiddler's ground of ailments about which little is known, and there suggestion—in which term we include all forms of "metaphysical aid"—has a legitimate field of exercise. It is unfortunate that its cultivation should still to a great extent be in the hands of quacks and honest but ignorant "healers" of one complexion or another. We welcome the discussion at the Harveian Society, as a sign that the profession is more fully realizing the value of certain potentialities of healing and relief which an ingrained materialism passes by on one side. We have, it is to be hoped, got beyond the stage of wilful blindness to facts of which unqualified persons are eager to avail themselves. The practitioners of hypnotism themselves have emerged from the region of humbug, conscious or unconscious, which made Charcot in his later years abandon it as an unclean thing. All around us spiritual or mental healing is going on. It is our duty, as it is our interest, to study the process scientifically, to define its limitations both in regard to the conditions to which it is applicable and to the persons who can successfully apply it, and to recognize, perhaps more fully than before, that man is a compound of body and spirit, both of which have to be taken into account by those who undertake the treatment of disease. The first step to be taken, if the profession is not to surrender a large part of its sphere of usefulness, is that medical practitioners should be trained in psychology as well as in physiology. In saying this we do not wish to be understood as pinning our faith entirely to experimental psychology. A careful study of the works of the great masters of the human heart is at least as important as the estimate of time reactions and the accuracy of visual impressions.

BODY, SOUL, AND SPIRIT.

THE second of the three ceremonies in connexion with the jubilee of the National Hospital for the Paralysed and Epileptic in Queen Square took place

on November 2nd, when a service of thanksgiving for the completion of fifty years' work was held. The Archbishop of Canterbury preached the sermon and took as his text: "When Jesus saw their faith, He "said to the sick of the palsy: Son, thy sins be forgiven "thee." In the course of his address he said that it had become a commonplace to say that the miracles of our Lord were signs, and not merely intended for the relief of human distress, but part of something greater. It was startling to see that the idea of God's care extending over the whole range of human life had been missed by authorities or left out in regard to the teaching of the Christian miracles. Little by little the world was learning that there was no such distinction as used to be drawn between one part of man's nature and the rest. Among the noteworthy lessons being learnt by the present generation was that of the unity of every part of human life, the harmonious working and effective interlacing of what was called "body, soul, and spirit." The very fantasies and exaggerations which were so rife nowadays on both sides of the Atlantic attested the growth of a wider recognition of that magnificent truth. The miracle of repairing that which was amiss pervaded the whole of the New Testament, and was very familiar to the present generation. In his book on surgical pathology, Sir James Paget well brought out the interdependence of the parts of the human body, and had shown that some were intended not for immediate use, but for eventualities or accidents which might occur. Recovery from injury and disease seemed to point to the existence of a higher law, which aimed at the recovery of all lost good things, and the whole trend of such thought suggested the impossibility of severance and disjunction between the different parts of the composite thing called "the life of man on earth." That idea was particularly appropriate to the National Hospital, where a special study was made of the interlacing and interdependence of human actions and their causes, and where special power was acquired for dealing with all that underlay the meaning of the difficult word "neurology." That hospital was a memorial to a thoughtful prince who in the school of suffering had learnt sympathy; and in it for fifty years medical men had step by step been acquiring valuable knowledge and the power of affording splendid service to sufferers. Those who realized the grip that was now being taken on problems and mysteries wholly misunderstood generations ago could not doubt that the present generation or its children would witness even greater achievements. At the conclusion of the service the Duchess of Albany received purses on behalf of the Jubilee Fund, which now stands at £19,000. The total sum required is £50,000.

THE HOUSING BILL.

The amendments made by the Lords to this measure engaged the attention of the House of Commons for nearly twelve hours on Monday. The consideration of the alterations proposed by the Upper Chamber began at a quarter to four on Monday afternoon and finished at a quarter-past three on Tuesday morning. Eighteen pages of amendments were disposed of, and all the important points fully and keenly debated. The President of the Local Government Board pointed out that there were some four or five amendments destructive to the principles of the bill, and these must be opposed by the Government. The first related to the acquisition of land, and substituted the more costly and cumbrous method embodied in the Port of London Act for the more simple and economic plan proposed in the bill. After a brisk debate this amendment was rejected and the bill restored to its original form by 163 votes to 47. The other vital alterations, substituting the county court for the Local Government Board in deciding certain questions, the new clauses as regards town planning introduced by Lord Cawdor, and the amendments to the betterment provisions, were all in turn rejected by the Commons. A very vigorous attempt was made by the members for Leeds, supported by Mr. Lupton, to retain an alteration made in the Lords in favour of back-to-back houses as sanctioned at Leeds, but Mr. Burns demolished the advocates of this form of dwelling by a flood of statistics relating to the death-rates of children and the prevalence of tuberculosis in such houses, and the opposition was not carried to a division. Two other matters of much medical interest also came up in connexion with Part III, which deals with county medical officers. In the Lords the second subsection, which gave the Local Government Board power to prescribe the duties of county medical officers of health, had been struck out. Mr. Burns met this by the offer of a compromise, which gave the Local Government Board power to prescribe the general duties while the local authority regulated the work of the medical officer by its own regulations. On this there was a very animated debate. The action of the Lords was defended from the Liberal benches by those who stood up for the independence of local authorities, especially county councils. Mr. Ryland Adkins was the champion of the county councils, and he was supported by Sir William Collins. Sir Walter Foster, on the other hand, supported the compromise offered by Mr. Burns, and this was carried by a majority of 52. A majority of the same strength also rejected the amendment of the Lords which deprived the medical officer of health of a county of the right to appeal to the Local Government Board against dismissal. This was opposed in the interests of the county councils, and Lord Morpeth accused Sir Walter Foster of trades-unionism for advocating security of tenure. The principle, however, was affirmed, and the bill now goes back to the Upper Chamber very much in its original form, and retaining the points of great medical value which had been endangered. After the conferences between the Houses which must follow, we hope the measure will pass into law retaining all the best features of the original draft.

THE AMENDMENT OF THE MIDWIVES ACT.

It appears to be now universally recognized by all who have given attention to the matter, that amendment of the Midwives Act, 1902, is necessary in several directions. One glaring defect in the Act is that, though it imposes upon midwives the duty to summon medical assistance under certain specified circumstances, it provides no machinery for remunerating the medical practitioner thus summoned. The British Medical Association submitted evidence on this and other matters to the Departmental Committee,* and that Committee reported that secure expectation of payment should be given to a medical practitioner summoned on the advice of a midwife in a case of emergency. The Central Midwives Board at its meeting last week, as will be seen from a report in the Supplement, adopted a resolution to the effect that any amendment of the Midwives Act should comprise provision for adequate and certain remuneration of medical practitioners called in under the Board's regulations to assist midwives. As was pointed out in the evidence submitted by the Association to the Departmental Committee, the existing law provides two methods whereby local authorities might make the necessary provision—namely, through

* An abstract of the evidence given was published in the Journal of August 28th, 1909, p. 556.

the board of guardians under the Poor Law or through the local sanitary authority under Section 133 of the Public Health Act, 1875. Cogent reasons were advanced for giving the preference to the latter alternative, one of these being that the provision of medical assistance is undertaken by the State more in the interests of the public than in those of the individual. There is published elsewhere (p. 1360) a letter, written on the instructions of the Manchester Corporation, showing that that body, after full consideration, has arrived at the conclusion that the fees of medical practitioners called in under the circumstances stated should be paid, not by the board of guardians, but by the local supervising authority. In Manchester the payments are now made under the Public Health Act, 1875, and the Corporation is opposed to the duty being cast upon the guardians. The letter has been circulated to local supervising authorities in other large centres of population, and will no doubt influence them in forming an opinion as to this administrative point. It is satisfactory to find that all responsible persons who have looked into the matter are agreed that the injustice inflicted on the medical profession by the absence from the Midwives Act of any provision for the payment of fees under the circumstances here considered must be remedied. It is reasonable to ask that the application of the remedy should not be delayed, but that the Government should introduce and pass an amending bill in the next session of Parliament.

SECRET REMEDIES.

The demand for *Secret Remedies*, large almost from the first, appears to be steadily increasing. To meet the orders of the booksellers and newsagents a series of reissues have rapidly been made, but even so copies have been on several occasions temporarily exhausted. In consequence each reissue has been larger than the one before, and the last, made very recently, consists of twice as many copies as any of its predecessors. This success is the more remarkable as the book has been very little advertised, and certain newspapers, as has already been stated, have refused the advertisements tendered. Nor has the book been fortunate in obtaining many reviews, the reticence of so many of our contemporaries in their editorial columns being due, it is fair to assume, to the same cause as has led to exclusion from their advertising columns. The book is, however, strong enough to make its way by its own merits, and the circulation of tens of thousands of copies of this plain statement of undisputed facts cannot fail to do much to enlighten the public mind as to the methods of a trade which lives on the fears, the ignorance, and the credulity of mankind.*

RESEARCH AND HIGHER EDUCATION IN LONDON.

The London public takes so little interest in science, and knows so little about the scientific institutions of the metropolis, and the education and research work they do, that the enterprise of the *Standard* in attempting to enlighten public opinion in these matters deserves a cordial welcome. It intends once a month to devote a considerable amount of space to information as to the facilities for higher education and for research in London institutions. There are many reasons why such a scheme, if judiciously conducted, may do much good. It may encourage young Londoners to take advantage of the opportunities already afforded to them, it may stimulate Londoners generally to feel a pride in their colleges and laboratories, and may perhaps induce the pious founder to take his share in filling up some of the many gaps in a field where many willing workers would be ready if the necessary laboratories and apparatus could be provided. The experiment was begun on Monday last, when a page was devoted to it, leading off with a stirring article by the Principal of the University of London on the place of research in training. Dr. Miers is able to tell the public, with all the authority which his position gives, that the spirit of research is so potent a force in higher education that without it no university teaching is likely to be able to hold its own. There ought, he says, to be no place for the university professor who is not moving with the restless tide of advancing knowledge, and who is not himself one of the forces that direct it. The article by Dr. Miers is followed by an account from the lips of Professor Flinders Petrie of the work of the British School of Archaeology in Egypt, and that by a description of the ultra-microscope (so-called). Reviews of scientific books overflow on to a second page, but the last two columns of the first page are devoted to lists of the more important lectures and courses of lectures to be delivered in the University of London, of research facilities in London, and of extension courses. Very wisely no attempt is made to give particulars of the ordinary academic lecture courses, but the list would perhaps still bear a little more pruning in this respect. In other directions the lists might no doubt have been extended, but, as they stand, will probably be a revelation to most Londoners. The only part of the scheme, however, to which serious objection can be taken is to "a selected list of research publications." It is rather difficult to see on what principle the selection has been made; so far as medical subjects is concerned, it is both inadequate and redundant. Some of the papers, enumerated with the names and diplomas of their authors, are not really research papers, but ordinary contributions to medical and surgical practice. Even if the principle which has guided this selection were sounder than it would appear to be, we have no hesitation in saying that the inclusion of clinical papers is a mistake. It will, we are quite sure, be distasteful to the medical profession, and, as we have pointed out, such contributions to medical literature fall distinctly outside the scope of the experiment which the *Standard* is making.

MINE RESCUES.

The failure of the Government to introduce regulations to lessen the loss of life after explosions in mines ought to arouse the public conscience. Science has proved that such deaths are not inevitable, and it is sixteen years since Dr. Haldane demonstrated at an annual meeting of the British Medical Association a portable apparatus capable of containing enough oxygen to sustain life during active movement for four hours; even earlier than this Fleuss so far proved the value of an appliance of similar purpose at the Seaham Collieries that a Commission on Mining Accidents then sitting recommended that in all mining districts centres should be formed for the instruction of men in the use of oxygen machines. Effect was not given to this recommendation, and when some three years ago the Courrières disaster focussed public attention on the subject, the Government included the matter in the reference to a Royal Commission which it appointed. This Commission unfortunately expressed the opinion that the time had not yet come when the provision of rescue appliances in mines should be made compulsory; the reason assigned was that only experience could prove that they were of real utility

* *Secret Remedies* can be obtained either through any bookseller or direct from the Manager, British Medical Association, 429, Strand, W.C. Price, 1s. 3d., post free.

in the saving of life after accident. Such experience is not likely to be forthcoming unless mineowners keep such appliances at hand and train men in their use; but there is ample evidence that the appliance used by the Westphalian miners, which provides for the removal of carbonic acid as well as for the supply of oxygen—a development, it is believed, of a device originating in this country—is of sufficient utility to make it clear that the problem, though presenting practical difficulties, is not insoluble. Men merely entombed by blockage of galleries can commonly be rescued in time provided those engaged in digging them out can be supplied with sufficient oxygen, and, as a case recorded in these columns by Dr. Robertson of Clackmannan[1] last March, this can sometimes be effected by the simple process of liberating pure oxygen in the galleries in sufficient amount to produce a respirable mixture. The position of men overcome by after-damp is much more urgent. Immediately after an explosion they are immersed in an atmosphere containing nitrogen, carbonic acid, carbon monoxide mixed with some ordinary air, and (unless the mine is one singularly free from dust) sulphurous acid, or sulphuretted hydrogen, together with certain products of the dry distillation of coal, which give to after-damp a characteristic unpleasant smell. In unmixed after-damp the percentage of nitrogen is about 88 per cent., of carbonic acid 12, and of carbon monoxide 4. Even should the carbon monoxide be much less and the proportion of normal air remaining in the galleries considerable, carbon monoxide poisoning—the chief cause of death in these accidents—will sooner or later ensue. The air which subsequently fills the galleries, and which has to be encountered by rescuers, is a somewhat different mixture, as, besides after-damp, it contains black-damp (a mixture of nitrogen and carbonic acid) and fire-damp, which, according to Haldane, is in English mines always pure methane. But, even though oxygen appliances are unlikely to be of direct utility to the actual victims, they are of immense indirect value, because they allow rescuers to approach them in comparative safety, and bring them rapidly into pure air. Arrived there, oxygen appliances may again be of utility to the victim. It seems indisputable, therefore, that however far short of perfection existing appliances may be, the Government ought to insist upon some one or other of them being kept ready at mines, and on a certain number of miners at each being trained to use them, so that the experience said to be necessary before an ideal apparatus can be devised may begin to accumulate Meanwhile, we may draw such consolation as is possible from the proof afforded by these accidents of the persistence in the race of cool, self-sacrificing courage. After the recent disaster in Wales party after party of rescuers descended, and five lost their lives. One of the first to descend and the first to suffer was a young medical man, Dr. W. Turner, of Deri, who climbed down the shaft to attend to two men known to be lying injured at its foot. After attending to these he appears to have gone further into the mine in the hope of helping others, but fell unconscious, and was only rescued five hours later. Besides suffering from carbon monoxide poisoning, he was found to have a dislocated shoulder. Among those who finally brought him to the surface was another medical man, whose name we have not yet learnt.

BRITISH MEDICAL BENEVOLENT FUND GUILD.

A MEETING was held at the house of Sir John Tweedy, 100, Harley Street, on October 28th, for the purpose of inaugurating a guild in connexion with the British Medical Benevolent Fund. The object of the guild is to make the fund more widely known and to obtain additional support for it, especially from women, and to supplement its work by giving help and practical sympathy to the beneficiaries of a more personal character than is possible for the parent fund. Sir John Tweedy presided, and among those present were: Lady Tweedy, Sir William and Lady Church, Lady Barlow, Mrs. Butlin, Mrs. Scharlieb, Mrs. Rose Bradford, Lady Fripp, Lady Bennett, Mrs. West, Mrs. Liveing, Mrs. Godlee, Mrs. Crocker, Lady Critchett, Dowager Lady Broadbent, Lady Broadbent, Miss Broadbent, and Dr. West. The Chairman said there was appalling distress among the poorer members of the medical profession, and without some such help as this fund had been able to give hundreds of wives, daughters, and sons of doctors would have had to face extreme poverty and destitution. Lady Tweedy gave particulars of many cases of distress among the families of many members of the medical profession, and urged that in the new guild ladies should be the missionaries of the Benevolent Fund. The guild proposed to visit and take personal interest in the cases recommended by the Executive Committee of the fund, to make gifts of clothing and other necessaries, and to do such other work as might from time to time seem desirable and be approved by the Executive Committee of the fund. Dr. West said that while the fund would deal with money, the guild would give not money, but money's worth. There could be no worthier object than the relief of the poor members of the medical profession, and the guild appealed for support, not to the medical profession only, but to the public at large, upon whom it has such strong claims. Dr. West then proposed a resolution that such a guild should be established. This was seconded by Lady Church and carried unanimously. The following officers were appointed: President, Dowager Lady Broadbent; Treasurer, Dr. May Thorne; Chairman, Lady Tweedy; Honorary Auditor, Mr. Knox, with a council and various committees. The guild is to consist of members who pay not less than 10s. 6d. annually and associates who give not less than 2s. 6d. annually and their personal services. The guild has, we understand, already met with very cordial support from wives of members of the profession in London, and we have no doubt that it has only to become more widely known to ensure offers of help from ladies residing elsewhere. Subscriptions and donations to the guild may be sent to Lady Tweedy, 100, Harley Street, and to Dr. May Thorne, 148, Harley Street. Parcels of clothing, etc., to 11, Chandos Street, Cavendish Square. Letters and communications to the Secretary, 100, Harley Street.

DR. RAYNER OF STOCKPORT.

WHEN early this year Dr. Edwin Rayner resigned his position on the active staff of the Stockport Infirmary, after thirty-four years of hospital work, we announced that his resignation had been received by the committee of the hospital with great regret, and that he had been appointed Consulting Surgeon and Vice-President of the hospital. On October 28th further evidence of the high esteem in which Dr. Rayner is held in Stockport was afforded by a short ceremony which took place at the infirmary, when Dr. Rayner was presented with a very fine service of silver plate on behalf of a large number of subscribers. The presentation was made by Mr. Sydney Hollins, Chairman of the Infirmary Board, who asked Dr. Rayner, in accepting the gift, to accept also from those present, from every one connected with the infirmary, and, in fact, from the whole of Stockport, their

[1] BRITISH MEDICAL JOURNAL, vol. i, 1909, p. 712.

gratitude for the good and kind work he had done in the town and the district so long and so well. Major Alan Sykes, Treasurer of the infirmary, said that it was the habit of a treasurer to discharge debts with money, but there were some debts which could not be so discharged, and the obligation under which Dr. Rayner had put the infirmary was one of them. It was the support of men like Dr. Rayner, eminent in their profession and honoured in their walks of life, which obtained the support and respect of their fellow-citizens for institutions such as the infirmary, and which gave confidence to the people that the administration of an institution like that was conducted on right and proper lines. The Mayor said that the feeling towards Dr. Rayner which found expression in the presentation was in fact general throughout the town. Canon Symonds and Mr. Alderman William Lees having spoken in the same sense, Dr. Murray said a few words on behalf of the medical staff of the infirmary. He spoke of the chivalry and loyal affection with which Dr. Rayner had guided their deliberations, of the very high esteem in which the profession in the town held him, and to the evidence which the fact that Dr. Rayner was treasurer of the British Medical Association afforded that that opinion was shared far beyond the bounds of Stockport. Dr. Rayner, in acknowledging the presentation, recalled some memories of former members of the medical staff of the infirmary which he had known since his school days. In the work of the infirmary there was, he said, a kind of partnership between the medical staff and the public, the latter finding the money and the staff the work done within the institution. As the one would be no use without the other, it was a very fair partnership, and it was only right that the outside partners should know of the great services which the progress of surgery had enabled the inside partners to render to the many hundreds of people who applied to the hospital for relief in their physical needs. He relinquished his services to the institution in the happy assurance that his successors would carry on its great and beneficial work with equal success. The presentation consisted of twenty-nine articles in solid silver, including twenty fruit stands, six flower vases, two rose bowls, and one fruit dish. The larger articles bore an inscription to the effect that the presentation had been made by the supporters and friends of the Stockport Infirmary to mark their appreciation of Dr. Rayner's valuable services as honorary surgeon for a period of thirty-four years. It should be added that Dr. Rayner has been presented by the medical profession in the town with a handsome silver salver.

MOTOR CAR INSURANCE.

A POINT has been raised in connexion with the "Doctor's" Motor Car Policy issued through Lloyd's which it seems desirable to clear up. Section I provides against "all damage to car which is the direct "result of accidental collision or impact with any "object (excluding wilful damage, wear and tear, and "mechanical breakdowns)" the question which has arisen on this is, Does the policy cover a collision due to brakes failing to act or to the steering gear going wrong? The answer is that it does. The underwriters will pay for, or make good all damage to, a car which is the direct result of accidental collision, whether such collision resulted from some mechanical breakdown or not. On the other hand, if an axle were to break when the car was being driven over a bad road, the damage done would not be covered under either the doctor's policy or comprehensive policy "A." Such accidents are covered by the comprehensive "B" policies. To take a concrete instance, the premiums on a 9-h.p. car, valued at £300, would be: Doctor's policy, £11 10s.; comprehensive policy "A," £10; comprehensive policy "B," £12 10s.; comprehensive policy "B," including special compensation, £13 15s. Under the doctor's policy an estimate for the repairs must be lodged immediately, and compensation for loss of use of the car begins two days after receipt of the estimate. Full particulars can be obtained on application to the Secretary and Agent of the Medical Insurance Committee, 429, Strand, London, W.C.

PROFESSOR OSLER ON THE HISTORY OF MEDICINE.

PROFESSOR OSLER delivered the inaugural lecture of the York Medical Society's winter session on November 2nd. He traced the work and influence of the great Greek physicians through the Byzantine, Graeco-Roman, and Arabian schools, and remarked that the Arabians really discovered chemistry and the pharmacopoeia, and preserved the light of medicine when priests and monks treated the sick with superstitious remedies. Two Oxford men did something for the revival of medicine in England—Roger Bacon and John of Gaddesden, the latter being the author of the *Rosa Anglica*, one of the earliest printed medical books. He it was who cured the young Prince Edward of small-pox by the use of red blankets, thus introducing the use of red light, a modern treatment. Referring to the revival of medicine in Europe by the founding of the Universities of Montpelier and Bologna, the latter made illustrious by the work of a contemporary of Dante, the great physician Tadeo, who was regarded as the first citizen of Bologna and, as a public benefactor, exempted from taxes. The founder of modern anatomy was Andreas Vesalius, and what he did for modern anatomy Harvey did for modern physiology. But none of the great men in the early schools of medicine could have had the faintest conception of the possibility of such progress as the Victorian era had witnessed. Great as had been their achievements in literature, yet greater in the physical sciences, and greater still in social and political reform, they were as nothing in respect to the gifts which modern medicine had given to suffering humanity—the conquest of pain, Listerian surgery, and the control of infectious diseases. A vote of thanks to the lecturer was moved by Dr. Jalland. The Dean of York, who supported, remarked that he commenced his early clerical life in Gaddesden, where John of Gaddesden was said to have cured the prince of small-pox.

ETHER DAY AT BOSTON.

COMMEMORATION exercises were held at the Massachusetts General Hospital on October 16th, in honour of the anniversary of the first use of ether by Dr. William T. C. Morton in 1846. President Emeritus Charles W. Eliot, of Harvard University, delivered an address in which he defended animal experimentation. A bronze bust of Morton was exhibited; it is to have a permanent place in the Smithsonian Institute in Washington. The inscription on the base is as follows: "MDCCCXIX. MDCCCLXVIII. Discoverer "of surgical anaesthesia. By whom pain in surgery "was averted and annulled. Before whom in all time "surgery was agony. Since whom Science has control "of pain."

A TUBERCULOSIS CONFERENCE AT OXFORD.

A CONFERENCE on Tuberculosis is to be held, under the auspices of the Oxford and Reading Branch of the British Medical Association and the Oxford Medical Society, on Tuesday, November 9th, at 3.15 p.m., in the Pathological Laboratory, the Museums,

Oxford. During the week the Exhibition of the National Tuberculosis Association will be held in Oxford, to which the public and the profession are cordially invited. It is an educational exhibit in which, so far as possible, everything relating to the disease will be shown. On Monday, Wednesday, Friday, and Saturday, at 3.30 p.m., popular lectures will be delivered by Dr. Theodore Acland, Dr. Bosanquet, Dr. Arthur Latham, and Dr. French, of London. On Tuesday afternoon and evening special professional meetings will be held in the Pathological Laboratory in the Museums. The programme will be found in the SUPPLEMENT in the Association Notices under the head of the Oxford and Reading Branch (see p. 300). On Thursday afternoon, at 3.30, in the Examination Schools, there will be a public meeting, presided over by Lord Valentia. The Lord Bishop of Oxford, the Vice-Chancellor, the Mayor, Sir William Anson, will make brief remarks, and addresses will be given by Dr. Philip, of Edinburgh, and Dr. Newsholme, Medical Officer to the Local Government Board.

THE friends and pupils of the late Professor Arthur Gamgee have initiated a fund which is intended to mark their high appreciation of his eminent services to science and his life-long devotion to the prosecution of knowledge. Subscriptions to the Gamgee Fund may be sent to Professor Arthur Schuster, Victoria Park, Manchester; Dr. A. D. Waller, Physiological Laboratory, University of London, S.W.; or to Dr. G. A. Buckmaster, University College, London, W.C. A meeting will be held shortly, the date and place of which will be announced in due course.

Medical Notes in Parliament.

The Housing Bill and the Lords' Amendments.

THE whole sitting on Monday last, which lasted till after 3 on Tuesday morning, was devoted by the House of Commons to the consideration of the Lords' amendments to this bill.

The discussion opened with a very conciliatory speech by the President of the Local Government Board, who then moved to disagree with the first amendment, which altered the proposals of the Government for the acquisition of land for housing.

A lively debate ensued, in the course of which Sir Walter Foster pointed out that what was feared were the delay and expense entailed by the procedure set forth in the amendment under consideration. The proposal that an order for the acquisition of land should be laid on the table of both Houses of Parliament was a subtle method of delay, the effect of which would be a reversion to the cumbrous and expensive method which had obtained for many years.

After nearly two hours' debate the Lords' amendment was rejected by a majority of 116, and the consequential amendments also similarly disposed of. The increased powers given to the Local Government Board were criticized at some length, but were retained in nearly all particulars, and proposals of the Lords to exclude London and the county boroughs from the purview of the bill were also disagreed with. Two amendments were refused on the ground of privilege as they touched on finance.

The right of the landlord to inspect his house on twenty-four hours' notice, inserted by the Lords, was adversely criticized by Mr. Keir Hardie, Mr. Lupton, and others, but was finally accepted, as were also the amendments extending the time from fourteen to twenty-one days for making repairs and the power of closing a house unfit for habitation instead of repairing it. The amendments allowing the landlord an appeal to the county court instead of the Local Government Board were struck out in every instance. The Lords' definition of a landlord as a person who lets a house "to a tenant for his own habitation" was disagreed with after some discussion, in which Sir Walter Foster pointed out that it would enable many houses which were in a deplorable condition to be let to a "man of straw," who would stand between the local authority and the responsible owner. This elicited an interesting and amusing speech from Mr. Balfour on the definition of a "man of straw." Clause 24, which had been struck out in the Upper House, was reinserted.

Later on a debate arose on Clause 44, which prohibits the erection of back-to-back houses but which the Lords had modified so as to allow the medical officer to pass certain houses so built, as in the case of Leeds. This extension was warmly supported by the members for that city, but Mr. Burns would have none of it. He said there had never been a reformer interested in housing for the poorest of the working classes who had not found that wherever back-to-back houses prevailed insanitation, fever, disease, and anaemia followed in their track. As against one authority who asked to be allowed to build these houses, all others, all Government departments, and all medical officers of health that he knew were against them. The Local Government Board inspectors were unanimous. The Leeds Trades Council, members of which lived in these houses, unanimously passed a resolution asking him to ignore the representations of property owners, and to have nothing to do with such houses. Dr. Niven had shown that in districts with no back-to-back houses deaths from all causes were 27.5, as against 38 in those with back-to-back houses; for infectious disease the difference between districts with and without these houses was the difference between 4.5 and 8.7 per 1,000, for consumption between 2.8 and 5.2, and for death from diarrhoea among children between 1.4 and 3.4. It was the general experience that these houses were bad. The advocates of back-to-back houses were supported by Mr. Lupton, who said that Mr. Burns had proved too much, but when a division was called the Lords' amendment was rejected without a vote being taken.

The town planning part of the bill was next taken, and the amendments mostly disagreed with or amended.

When Part III was reached, on Clause 68, appointment of medical officer by county council, Mr. Burns moved a new subsection to give the Local Government Board power to prescribe the general duties of the medical officer, in place of the subsection struck out by the Lords. A brisk debate arose on this proposal although it was close on 2 in the morning, as Mr. Adkins resisted on the part of the county councils, and appealed to the Government not to tie the hands of county councils in this way. It was, he argued, an attack on the capacity of great local authorities. Sir William Collins also regarded it as an invasion of the rights of local governing bodies in regard to the control of their own officers. Sir Walter Foster said the campaign against bad housing ought to be directed on general principles laid down by the Local Government Board, while the local control of the medical officer could be retained by the County Council. In this matter of public health they did not owe any great debt of gratitude to the county councils. For many years they had neglected their duties in this respect. Only a few of them undertook their duties. When the Bill of 1888 was before the House he had contended for the compulsory discharge of duties in this connexion, and it was not granted. A clause was inserted in this bill to compel every county council to appoint a medical officer, and he thought no county council would be injured by having general regulations laid down by the highest possible authority in this country—he might say by the highest authority in these matters in the world. The House then divided, and carried Mr. Burns's amendment by 77 to 25.

The restoration of the subsection struck at by the Lords giving the medical officers of a county the right of appeal to the Local Government Board against dismissal then came on, and was opposed by Mr. Adkins and Mr. Munro Ferguson as humiliating to great local authorities and unnecessary. A long debate ensued, in which Lord Morpeth, Mr. Bowles, Mr. Everitt, and Mr. Jowett also opposed.

Sir Walter Foster strongly supported the proposal, and said that it must not be forgotten that the bill placed new duties on the medical officers of health, and that they were to have relations with property owners which they never had before. One of the matters with which he frequently had to deal when at the Local Government Board was the dismissal of medical officers because they had interfered with bad property, and they had a difficulty in keeping these men in their positions. He would like to see, not only every medical officer of health of a county, but every officer in the country have the right of appeal to the Local Government Board. No local authority would ever be refused by the Local Government Board the right of dismissal when officers had done wrong. It was only when the medical officer was in the right that the Local Government Board would not sanction his dismissal. On a division the right of appeal against removal was carried by 75 to 23.

The remaining clauses of the bill and the schedules were next amended in several particulars and the Lords' amendments in most instances disagreed with, and the reasons for disagreeing with the Lords' amendments reported and ordered to be communicated.

Enteric Germ Carriers.—Captain Clive asked the Secretary for War whether the supposed enteric germ carriers were still being detained in military hospitals and subjected to experimental medical treatment; and when he proposed to publish a further report on the success, or want of success, of this treatment. Mr. Haldane said that the Army Council had decided that germ carriers should be treated for three months in hospital on arrival in England, and if not cured at the end of that time would be given the option of remaining in hospital for further treatment. If they declined further treatment they would be discharged from the service. Consequent on this decision the men now at Netley would be discharged from the service if they declined further treatment. The second report on the carriers would shortly be published. In answer to a suggestion that the matter should be referred to an unprejudiced authority for investigation, Mr. Haldane said that he thought the Army Council was an unprejudiced authority. Mr. Lupton then asked if many did not think the whole subject of germ carrying, as now dealt with, nonsense, and Mr. Haldane answered that this was a new branch of knowledge which was not so far advanced as he should like it to be.

Deaths from Fever in India and Sanitary Expenditure.—Dr. Rutherford asked the Under Secretary of State for India last week whether, in view of the Viceroy's statement on October 12th at Simla that the deaths from fever in India during the last ten years averaged nearly 4½ millions, and that last year the deaths were one million over the average, and the increase was believed to be due to malaria, he could say how much money was allocated by the Government of India in 1898 and 1908 respectively, under the following heads: sanitation, irrigation, education, railway, and army. The Master of Elibank replied that the expenditure on sanitation was not recorded under one head in the accounts, as officers of various departments were engaged in work intended to improve the health of the people. He had, therefore, grouped together, as representing expenditure of this nature, the outlay shown in the Government Accounts under the head "Medical," the outlay shown in the same accounts under the head "Civil Works" for hospitals, dispensaries, drainage, waterworks, and similar objects, and that shown in the accounts of municipalities and other local bodies under the heads "Medical," "Conservancy," "Water Supply," and "Public Health and Convenience." The total expenditure under all these heads amounted to £2,915,000 in 1897-8, and £4,455,000 in 1907-8. He might add that a special permanent grant of £200,000 a year was made in 1908-9 by the Government of India to Provincial Governments to be used for additional expenditure on sanitary purposes.

Civil and Military Medical Services (India).—Mr. Hazleton asked the Under Secretary of State for India whether the higher grades of both the civil and military medical services in the Native States were usually filled by Indians to the entire satisfaction of the Government and the people; whether similar posts outside these States were held by officers of the Indian Medical Service at much higher salaries; and, seeing that this latter system led to extravagance, inefficiency, and discontent, whether he proposed to abolish it by filling these places as in the Native States. The Master of Elibank replied that so far as the Secretary of State had information on the subject, in the twenty-five most important Native States the headship of the medical department, with six exceptions, was held by an Indian; in the six mentioned the head was an officer of the Indian Medical Service; but in sixteen of the remainder there was an agency surgeon, whose advice was doubtless available to the Durbar in medical matters. He had no information as to other medical appointments in those States, and had not heard that any dissatisfaction with them had been expressed. As to the system in force outside those States, and the measures being taken in connexion therewith, he referred Mr. Hazleton to the papers recently laid on the table of the House.

Sanitation and Malaria in India.—Mr. Rees asked the Under Secretary of State for India whether he had any official information showing that the diminution of deaths from malaria necessarily followed upon improved sanitation, or whether it was still doubtful if improved sanitation materially lessened mortality from malaria; and whether the Secretary of State had any figures in relation to those matters which he could lay before the House. The Master of Elibank answered that the Secretary of State saw no reason to doubt the conclusion of medical authorities in India that rational sanitary improvements, by raising the public health, tended to increase immunity against malaria, and that particular measures such as drainage, clearing of sites, and distribution of quinine directly reduced sickness and mortality in epidemics. But he was unable to give reliable figures, as the effect was often obscured by imperfect mortality returns and other circumstances.

Vaccination.—Mr. Summerbell asked whether the inoculation of calves with variolous matter, or with matter impregnated with small-pox, or with matter whose origin was small-pox, produced variolous disease in the calves inoculated with it; and, if not, what was the disease which was produced in the calves so inoculated. Mr. Burns replied that the subject referred to would be found fully discussed in Paragraphs 352 to 362 of the Final Report of the Royal Commission on Vaccination. He might state briefly that, whilst the Commission of the Society of Medical Sciences at Lyons, who fully investigated the matter in 1865, failed to transform human small-pox into cow-pox by inoculating cattle, other experimenters had succeeded in so doing, but that the eruption produced was entirely local in its character, and was incapable of producing small-pox in human beings. Mr. Summerbell also asked the President of the Local Government Board whether he would issue an order to boards of guardians and public vaccinators giving practical effect to Section 32 of the Vaccination Act, 1867, in view of the fact that the lymph now in use for vaccination had probably a variolous origin. Mr. Burns said that he was not aware that any order was required, or indeed could be issued, to give effect to Section 32 of the Vaccination Act, 1867. As he had pointed out on September 28th in reply to a question, that section rendered it an offence to produce or attempt to produce small-pox in any person by inoculation with variolous matter or by any other means. Most of the lymph used in cases of primary vaccination was that supplied from the Government Lymph Establishment. That lymph did not produce, and was not used to produce, small-pox, and persons using

it did not come within the section. There was no reason to doubt that the same observations applied to other lymph in use in this country.

Medical Inspection and Vaccination.—Mr. Lupton, in connexion with the recent incident in Hertfordshire, asked the President of the Board of Education whether it was in accordance with the rules of the Board that the examination of children should be used for the advocacy of cowpoxing, and if not, what steps he proposed to take. Mr. Runciman, in reply, stated that the local education authority had been advised that "care must be exercised . . . so that the work of medical inspection may not be prejudiced in the minds of parents who have a conscientious objection to vaccination," and that "the inquiry should not be used as the basis of action under the Vaccination Acts."

Feeding Suffragettes in Prison.—Mr. Keir Hardie asked the Secretary of State for the Home Department whether Mrs. Leigh was still being fed by force in Winson Green Gaol, Birmingham; whether persons convicted of a similar offence to hers at Newcastle, Dundee, and elsewhere, who refused voluntarily to take food were liberated; and on what grounds forcible feeding was being applied to Mrs. Leigh and not applied to the other cases named. Mr. Gladstone said in reply that, since the outbreak of violence at Birmingham in September, he had followed one rule with regard to the prisoners who refused to take food. Where they were reported medically unfit to be fed by artificial means he had advised the remission of their sentences as soon as this was recommended by the medical authorities of the prison. In other cases it had been obviously impossible for him to remit the sentences, and they had received the medical treatment appropriate to their condition. Some of the Newcastle prisoners were released on medical certificates; others served their sentences under suitable medical treatment. In the case of Mary Leigh, there was no indication until Friday last of any medical reason for her discharge; but on Friday, owing to a change in her condition, a consultant was called in, and on Saturday he received certificates which showed that her health, weakened by her repeated attempts at starvation, was suffering, and her discharge was immediately authorized. In reply to further questions, he said he was not responsible for what was done at Dundee, and he declined to publish the medical reports. Mr. Keir Hardie then asked if he had any reports of the condition of Charlotte Marsh, whose sentence did not expire for some six weeks. Mr. Gladstone said that reports were furnished every day about all the cases, but if the hon. member wished he would communicate with the prison authorities. Mr. Hugh Law then asked if he was prepared to abandon this filthy and disgusting practice. Mr. Gladstone replied that he did not agree that it was a filthy practice. Hon. members had made no protest against this practice, which had prevailed for very many years past in asylums, in prisons, and hospitals, and the effect of which had been grossly exaggerated, as the hon. member was himself aware. Asked, then, if the balance of medical evidence was not to the effect that it was exceedingly dangerous, Mr. Gladstone answered: Emphatically no. The most skilled and experienced medical men had given a precisely opposite opinion.

Care of Feeble-minded.—Mr. Henry Walker asked the Prime Minister on Monday whether, in view of the unanimous recommendation of the Royal Commission on the Care and Control of the Feeble-minded in favour of taking out of the Poor Law all classes of mentally defective persons and of removing the feeble-minded from the workhouses, steps were now being taken for the preparation of legislation on the subject; and whether, in the meantime, care would be taken not to give the sanction of His Majesty's Government to any schemes of local authorities which would involve in any Department expenditure in a direction contrary to the recommendations of the said Royal Commission. Mr. Asquith replied that the Government were alive to the importance of this matter, and he would refer to a statement of the Home Secretary, made on August 31st last, in reply to a deputation. The Home Secretary on that occasion said that, though there might be considerable difficulties in the way of legislation, he was in agreement with the deputation as to the importance of the subject, and that he had ascertained that the Lord Chancellor was of the same opinion; and he added that he hoped to be able to make a practical effort next session in the direction of legislation. In answer to the latter part of the question, he would refer to an answer given on August 27th by the President of the Local Government Board, in the course of which he gave an assurance that he would bear in mind the recommendations of the Royal Commission, but that, pending legislation, he was not prepared to undertake that his sanction should be withheld in all cases in which proposals for new buildings for inmates of the class described might be brought before him.

The Sanitary Condition of Croydon.—Mr. William Thorne asked questions on Monday last relating to the large number of cesspools in Croydon, and the menace to the public health therefrom, and asked the President of the Local Government Board whether he would request a report to be made by the medical officer of health, or, if not, whether he would direct a local inquiry to be held. Mr. Burns replied that it was estimated that there were 11,900 inhabited houses in the Croydon rural district, and that approximately 400 properties drained into cesspools. Of these, 270 were outside the areas in respect of which there was an agreement between the councils of the borough and of the rural district for the reception of the sewage into the sewers of the corporation, and these houses were stated to be for the most part in rural portions of the district, and at a considerable distance from an outfall sewer. In one parish, Woodmansterne, it was stated that there was urgent need for main drainage for about ninety houses near the boundary of Coulsdon which could be connected with the borough sewers, but this parish was outside the areas from which the corporation received the sewage, and he was informed that they refused to extend these areas except upon terms which the District Council were unable to accept. The Rural District Council, who had spent some £220,000 on works of sewerage and sewage disposal, had schemes already sanctioned or in course of preparation in respect of seventy of the properties in the parishes of Beddington, Coulsdon, and Sanderstead, parts of which were included in the drainage areas, and it was stated that the remainder of these properties were, with a few exceptions, in isolated places where at present the cost of sewer extension would be unreasonable. It was added that in every case where a public sewer was within 100 ft. of the property draining into a cesspool, the owner had been urged by notice or otherwise to connect with the sewer. The Rural District Council had offered to instruct the medical officer of health to prepare a report upon the matter referred to, and he had requested that this might be done.

The Sewerage of Kilkee.—In answer to Mr. Arthur Lynch, Mr. Birrell stated that the question of the unsatisfactory sewerage of Kilkee had occupied the attention of the Local Government Board for a long time, which in 1904 issued an order dealing with this subject and with the water supply. Legal difficulties had, however, considerably delayed the Kilrush Rural District Council in procuring an improved water supply, without which new sewers could not advantageously be laid down. As the Board now understood that the new water supply would shortly be in working order, it had urged the District Council to appoint an engineer and obtain plans for the sewerage system. In the event of unnecessary delay in proceeding with the works the Board would take steps to enforce its order.

Health Resorts and Watering Places (Ireland) Bill.—This bill was read a third time in the Lords last week and passed.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

THE MEDICAL TREATMENT OF SCHOOL CHILDREN IN LONDON.

As already reported in the BRITISH MEDICAL JOURNAL (July 17th, 1909, p. 155, and July 31st, p. 295) the London County Council before the summer recess accepted the offers of various hospitals to provide medical treatment, either gratuitously or for payment, for children attending the London elementary schools, and instructed the Education Committee to negotiate with other hospitals which might be prepared to undertake treatment.

The Education Committee on November 3rd had before it the results of inquiries addressed to fifty-five hospitals. The Day Schools Subcommittee, which made the investigations, reported that of the fifty hospitals which had replied eighteen had either not expressed any desire to co-operate with the Council in the matter or were sympathetic, but unable to undertake additional work. This number included the Paddington Green Children's Hospital, which in July was prepared to provide medical treatment free of charge, but now stated that it was not in a position to undertake additional work. The committee of the London Hospital, which had also offered free assistance, had since intimated a desire to come to an agreement on the financial basis proposed by the Council for the treatment of children sent to it. The undermentioned four hospitals were now providing medical treatment free of charge to the Council for the following number of children:

Hospital.	No. of Cases which can be Treated per Week.			Total.
	Eyes.	Ear, Nose, and Throat.	Skin.	
Central London Ophthalmic ... Queen's (Children's) ... ... Royal Westminster Ophthalmic Victoria (Children's)	198	75	28	301

In addition about 90 children a week were being treated at Guy's Hospital, the authorities of which expressed their willingness to deal with school children in accordance with the regulations of the hospital. Arrangements were now being made to secure that, as far as possible, 390 children per week attended the hospitals named.

The authorities of the remaining 27 hospitals desired financial assistance, and final terms had been suggested in respect of 14 of these hospitals. As a guide in determining the extent to which provision is necessary the subcommittee had before them figures prepared by the Medical Officer (Education) in April, 1909. It was then estimated that some 44,000 children required treatment for bad vision, discharging ears, or ringworm, and they had taken that figure as the annual number for which provision was necessary, although there was much difficulty in dealing with estimates of that kind. The hospitals providing free treatment had undertaken to deal with 17,000 children a year, but the subcommittee found that, owing to the location of the hospitals, the districts which might reasonably be expected to serve these hospitals would not be able to supply more than 16,000 children suffering from the ailments referred to. Provision had therefore to be made for the remaining 28,000 children. A certain proportion of this number —say, one quarter—would probably obtain treatment privately or at hospitals with which the Council had not made arrangements. The subcommittee was accordingly of opinion that it would be well to assume that medical treatment would have to be paid for in respect of 21,000 children.

There would be considerable difficulty in controlling the numbers of children attending the hospitals with which the Council might make arrangements, and the committee thought, therefore, that in making arrangements with the hospitals on a financial basis, it would be well to leave a margin between the number of cases to be treated by the hospital and the number of cases estimated to require treatment, at all events until they had had some experience as to the extent to which the parents would conform to the arrangements made by the Council.

Having regard to this difficulty and to the arrangements already being carried out at the hospitals which are providing free treatment, the committee had considered the facilities offered by the various hospitals desiring financial assistance, and found that the undermentioned eight hospitals could be utilized for the treatment of approximately 16,000 children a year, suffering from eye, ear (including nose and throat), and skin ailments, at a cost of about £4,000 a year:

The Belgrave Hospital for Children, Clapham Road, S.W.	1,760 cases.
Charing Cross Hospital, W.C.	2,200 ,,
The Hospital for Diseases of the Throat, Golden Square, W.	1,000 ,,
King's College Hospital, Lincoln's Inn Fields, W.C.	500 ,,
The London Hospital, Whitechapel Road, E.	4,750 ,,
The Metropolitan Ear, Nose, and Throat Hospital, Tottenham Court Road ...	500 ,,
The Royal London Ophthalmic Hospital, Moorfields, E.C.	*3,000 ,,
St. George's Hospital, Hyde Park Corner, S.W.	2,000 ,,
Total	15,710 ,,

The subcommittee recommended that these offers be accepted, and in commenting upon the details of the agreements proposed to be entered into in each case, remarked that the charges varied somewhat in form from those upon which the Council decided that negotiations should be conducted, although there was not much difference in the total charge, except in the case of the treatment of ringworm. The authorities of the Charing Cross and King's College Hospitals needed a grant for new apparatus, and, in the case of the London Hospital, a grant for apparatus was desired if found necessary. The *per capita* charge for the treatment of ringworm by means of *x* rays at the London Hospital was temporarily fixed at 7s., and at Charing Cross and St. George's Hospitals the charge for this form of treatment had yet to be determined. The basis of payment at the Hospital for Diseases of the Throat, Golden Square, and the Metropolitan Ear, Nose, and Throat Hospital was an inclusive *per capita* charge of 4s. in each case. In some instances the hospitals stipulated that the *per capita* payment should be made whether or not the Council actually sent the specified number of children to the hospital. The authorities of the Royal London Ophthalmic Hospital were considering proposals for the establishment of a school eye clinic within the hospital, involving an initial expenditure of £1,200. In this building 12,000 children a year (48 a day for 250 days) could be treated. Apart from the question of the capital expenditure referred to, the annual charge for 12,000 cases would be £2,400. The committee did not think that it would be possible for the Council to contribute any part of the capital expenditure, and had informed the hospital authorities accordingly. They proposed that the authorities of the hospital should be asked to provide treatment for not less than 3,000 or more than 6,000 children on the basis of the above annual charge.

The subcommittee also recommended the acceptance of the offer of the committee of the Charing Cross Hospital to provide treatment by means of *x* rays for twenty-five children at a cost of £35, and stated that there were no reliable data upon which to estimate the cost of this form of treatment, but the

* The number of cases to be sent to this hospital is to be increased if necessary, but is not to exceed 6,000.

authorities of the Charing Cross and St. George's Hospitals had agreed to undertake a preliminary treatment of twenty-five children suffering from ringworm by means of *x* rays with a view to determining this. The committee of the Charing Cross Hospital required a guarantee that the Council would refund to them the cost of the experiment not exceeding £35—namely, £25 for a clinical assistant and £10 for apparatus. They thought, however, that it was probable that the actual cost would work out at less than that sum. To meet the convenience of the hospital it was desired that the experiment should be put into operation as early as possible in October, 1909, and, in view of the urgency of the matter, the Chairman of the Education Committe gave the required guarantee, and the experiment began on October 18th.

The subcommittee had also received proposals from various dispensaries and other institutions, and submitted one emanating from the Hampstead Council of Social Welfare, which offered to provide gratuitously, for one term, medical treatment for children attending public elementary schools in the borough of Hampstead who were suffering from affections of the eyes, ears (including throat and nose), and skin. It was proposed that the treatment should be provided at two clinics situated in the eastern and western districts of the borough respectively. The eastern clinic would be conducted at the out-patient department of the Hampstead General Hospital, which is at present closed. With regard to the western clinic, the Hampstead Council of Social Welfare desired the use of accommodation at the Kingsgate Road London County Council School (Hampstead). It had, however, other accommodation in view which could be utilized for the purpose of the western clinic in the event of the Council being unable to grant the use of Kingsgate Road London County Council School. The treatment would be given by local doctors who were specialists in respect of the ailments in question. The Hampstead Council of Social Welfare was willing to make special arrangements for dealing with children suffering from ringworm and was also prepared to undertake to secure that minor operations were undertaken by the doctors engaged at the clinics, who would provide an anaesthetist when necessary. Cases requiring operations of a serious nature would be referred to suitable hospitals.

The subcommittee recommended the acceptance of the offer, but advised that the use of the Kingsgate Road School should be declined.

The subcommittee added that these proposals would involve an expenditure of £4,000 a year, and would secure medical treatment for 16,000 children in respect of eye, ear, and skin ailments. There were, therefore, 5,000 children not provided for. It hoped to report shortly that further negotiations with existing institutions had reached a final stage. It might be taken that 5s. was the average cost of medical treatment by arrangement with hospitals (including the treatment of ringworm). A complete scheme for the treatment of the three ailments referred to would, it was at present estimated, therefore, involve an annual expenditure of from £5,000 to £6,000. It was difficult to make even an approximate estimate of the ultimate cost, as a year or so of experience would be necessary before this could be done. Sums which might be recovered from parents under the Local Education Authorities (Medical Treatment) Act, 1909, would, of course, affect the cost of treatment.

In conclusion the subcommittee stated that the present proposals were of an experimental nature, and would be reviewed after twelve months in the light of experience gained.

The proposals were debated at some length in the Education Committee. On the recommendation that the offers of eight hospitals be accepted, Mr. Saunders moved, and the Rev. J. Scott Lidgett seconded, an amendment that the agreements with the hospitals should include a provision that the waiting-room and other accommodation should be satisfactory to the Council, and that the hours of treatment should be convenient to working-class parents. The argument of those who supported the amendment was that the Council should exercise some control to ensure that the children received proper treatment in return for the expenditure of public money, while those who disagreed with it said that if the hospitals could be trusted to carry out treatment at all they could be trusted to give it under proper conditions.

The amendment was defeated by 22 votes to 14, and the recommendation carried.

It was also proposed by Mr. Bray to qualify the acceptance of the offer of the Hampstead Council of Social Welfare with the words "provided that the Council is satisfied as to the qualifications of the medical staff, and with the waiting room provision and the hours of treatment." The Chairman having stated that the medical men chosen for the work were approved by the Council's medical officer as "men sufficiently qualified and with good degrees," the amendment was altered to "understanding that the qualifications of the medical men are satisfactory and provided that the waiting rooms and hours of treatment are approved by the Council."

The whole report was then agreed to and will be submitted to the Council for final approval.

Tuberculous Cows.

The suggestion was made, at the meeting of the London County Council on November 2nd, that the result of the administration of Part V of the Council's General Powers Act, 1904, authorizing the seizure of cows suffering from tuberculous udders, has been to encourage dealers to send diseased cattle to London. Mr. Reynolds, commenting on a report by the Public Health Committee that a number of cows had been seized and slaughtered, said that in recent years an illicit trade in diseased animals had grown up. The medical officer of health for Portsmouth in a report directed to the "menace to health through the systematic trade in diseased animals, particularly tuberculous cows carried on in markets outside Portsmouth," and stated that owing to measures taken by the town, the animals were sent to other places, and specially to London. Mr. Reynolds thought the London County Council was paying excessively high compensation, and that the result was to tempt dealers to send diseased cattle to London. He wondered how long the cows mentioned in the present report had been in the hands of the owners. Mr. Easton remarked that until the Government passed general legislation to deal with the milk industry it would not be possible to trace a particular cow. Mr. Gilbert Johnstone, Chairman of the Committee, said the possibility of tuberculous cows gravitating to London as a consequence of the Milk Act had not been overlooked. Since last March only 22 cows had been seized in London, and there was no indication that an unusually large number of diseased cows were coming into London. The inspectors had instructions to report at once if they saw any sign of such a thing, and also to ascertain how long a particular cow had been in the possession of its present owners. Most of the cases which came before the Committee were undoubtedly bona fide, for it was only after careful expert examination that the indications of disease were detected.

MANCHESTER AND DISTRICT.

The Vicarious Philanthropy of a Lancashire Coroner.

The failure on the part of coroners to summon medical men to inquests where it is practically certain that the conduct of the medical man will come under review is fast becoming a scandal. It may not always be possible to know beforehand that a doctor's conduct will be impugned, but when that occurs unexpectedly, one would have thought that regard for common fairness would prevent any coroner making any remarks in court reflecting on a medical man who is not present to defend himself. A few words of explanation would often put a totally different construction on statements which by themselves give a wrong impression. Half a truth is

often worse than a lie in its effects, and it is surely an elementary duty of a coroner not to form conclusions from half-truths where it would be quite easy to obtain the whole truth. It is a matter for the greatest surprise that this fact seems to have been forgotten by Mr. Brighouse, the county coroner for the Ormskirk district of Lancashire, especially as on previous occasions he has shown himself by no means ill-disposed towards the medical profession. In an inquest held not long ago by Mr. Brighouse at St. Helens on a baby a few hours old, Dr. Unsworth, who had made a *post-mortem* examination, gave it as his opinion that the cause of death was premature confinement of the mother, and that the child would have had no chance of recovery even with medical attendance. The verdict was death from natural causes. It was stated in evidence that the child was born about 4 a.m., and that at 5 p.m. a midwife found it apparently in a fit. It was sent to Dr. O'Keeffe's surgery, but as he was out, it was taken to Dr. Bassett's. The witness who took it said that Dr. Bassett asked what was the matter, and was told that the nurse thought the child was dying, and that he could not attend unless he was paid. As the witness was going away, Dr. Bassett, it was stated, asked what the nurse wanted him to do with the child, and the witness said she thought the nurse wanted him to look at it. He then looked at it, and said that half a crown must be sent to the surgery and he would then attend it. The coroner then said in a suggestive way that was most unfair, "Although the baby was there right in front of him, he did not prescribe for it, or say anything about it, but simply said that if they would bring half a crown he would attend to it?" The witness assented to this, and the coroner then said, "He [Dr. Bassett] was within his strict legal rights, but whether he was within his moral rights I do not know. I will leave that to his conscience." It was stated that the father of the infant was shiftless and lazy, and the utter poverty of the family was due to his laziness. The coroner gave £1 out of the poor box, to be spent on the mother, and said "Let her know that there is at least one person with some compassion in his soul." One hardly knows which to be the more surprised at, the coroner's smug satisfaction at his own compassion, which was shown by giving something which cost himself nothing, or the pharisaic remarks about the medical man, founded on statements which that medical man would have absolutely denied if he had had the least chance. Dr. Bassett is too well known in St. Helens for these remarks to affect his reputation, except perhaps among that class to which apparently the father of the infant belongs. But this in no way mitigates the offensiveness of the coroner's remarks. Dr. Bassett has stated definitely in a letter to the coroner, written since the inquest: "The baby was not brought for treatment; as it was dying when I saw it, no treatment could have been of any avail. The object of bringing it to my surgery was so that I might see it before its death and so give a certificate. This I was unable to do, because the woman who brought the baby informed me that it had been born precipitately into a bucket of water. I certainly asked for a fee, but never said I would attend if the fee were sent, as there was no question of attendance." He says further that he censured the woman for not sending for him to visit the baby, and told her that the exposure was enough to cause the child's death. "I then examined the baby, and found it to be dying. I told the woman I could do nothing and advised her to take it home and keep it warm. That was all the treatment any doctor could have given. My fee for that examination and advice was half a crown which I asked the woman to have sent. I had no knowledge of the poor circumstances of the parents from first to last." It is evident from this that Dr. Bassett did not refuse medical treatment; he did all that could be done for a child that was actually dying when he first saw it, and having done all he could be asked for his fee to be sent. If he had given a certificate, he would have been greatly to blame, though probably it was this refusal that annoyed the friends. If Dr. Bassett had given the dying child an utterly useless bottle of medicine, apparently he would have satisfied the coroner; but to charge for time and trouble and advice without "a bottle" seems to be unpardonable, for the coroner says, "It is difficult to see what services the fee had to cover." One last absurdity remains: the coroner having uttered in open court an inconsiderate censure, all of which appeared in the public press, has offered to allow Dr. Bassett to attend the next inquiry at St. Helens and to make such public statement as he deems desirable. This is a tardy recognition on the part of the coroner that Dr. Bassett has ground for complaint that he was condemned without being heard. To offer to hear him after condemning him would be but scant satisfaction, as it is proverbially difficult to overtake an unjust aspersion. The St. Helens Division of the British Medical Association has passed resolutions expressing the opinion that the inquest was incomplete, owing to the failure to call the only medical practitioner who saw the child in life, and the Division "expresses its sympathy with Dr. Bassett in the unjustified and unwarrantable attack made upon him by the county coroner in relation to this inquest." These resolutions are under the consideration of the Medico-Political Committee of the British Medical Association, and will, we understand, be included among the matters dealt with in the evidence to be given on behalf of the Association before the Departmental Committee on Coroners' Law.

Notifications of Births at St. Helens.

On June 23rd last the medical officer of St. Helens, in a special report to the St. Helens Town Council on the working of the Notification of Births Act there, pointed out that the medical men in that town generally refused to notify births under the Act. As a result of this report the medical officer was instructed to report the specific cases. During the four weeks which followed, 16 cases occurred of failure to notify birth, and the Council, after considering very carefully all the circumstances, was of opinion that this failure to notify by medical practitioners was the result of the improper framing of the Act, which imposed upon professional attendants of the mother duties for which they were not remunerated. The St. Helens Town Council felt that it was not morally justified in taking proceedings under this Act against such professional attendants in these circumstances, and therefore on October 6th resolved to pay for each notification of birth under the Notification of Births Act the fee of 6d. In adopting this course it was believed that the recognition of the principle of remuneration was of more importance than the amount, and that it would lead to a more efficient working of the Act.

LIVERPOOL.

Annual Service for Medical Men.

The annual service for medical practitioners was held on the Sunday following St. Luke's Day (October 24th) at St. Luke's Church. The preacher was the Bishop of Carlisle (Dr. Diggle). After mature consideration, the committee which makes arrangements for this annual function decided to invite the members of the profession to attend in academical costume. The invitation was cordially responded to, the majority of those attending being so attired. The church was quite full in spite of the weather being most unfavourable, and the collection, over £34, was the largest taken at any of these services.

Sir James Barr and the Royal Infirmary.

In conformity with the rule which requires the members of the staff to vacate office on attaining the age of 60, Sir James Barr's term of office as physician to the Royal Infirmary (a position which he has held since 1897) has terminated. He had previously been physician to the Northern and to the Stanley Hospitals. The election of a successor is fixed for November 24th. So far the only candidate known

to be in the field is Dr. R. J. M. Buchanan, physician to out-patients and senior assistant physician to the infirmary.

Dinner of Graduates of the University of Dublin.

The dinner of graduates of the University of Dublin resident in the North of England, which took place at the Adelphi Hotel on October 18th was in every way a brilliant success. Covers were laid for about 120, and the Chair was taken by Sir Robert Ball, F.R.S., a distinguished graduate of the university. The principal guest of the evening was the Rev. J. P. Mahaffy, D.D., M.V.O., and the official guests included Mr. Edgar A. Browne, M.Ch., and Mr. T. H. Bickerton, President of the Medical Institution. Mr. Browne proposed the toast of the evening, "The University of Dublin," in one of his charming, humorous speeches, which was replied to by Sir Robert Ball and Dr. Mahaffy. Dr. Mahaffy then gave "The Sister Universities," which was responded to by the Lord Mayor of Liverpool, who is a graduate of Oxford. Dr. T. R. Bradshaw then proposed the toast of "The Visitors," to which the Archdeacon of Liverpool and Mr. Bickerton replied. A vote of thanks to the Chairman, proposed by Canon Rountree, brought the proceedings to a close. An agreeable musical programme was rendered during dinner. Those present were generally of the opinion that the gathering was the most successful that has taken place since the annual dinner was inaugurated nearly twenty years ago, and great credit is due to the local secretaries, Dr. F. Strong Heaney and the Rev. H. D. Morgan, LL.B., for their share in its promotion.

WEST YORKSHIRE.

Dinner of Yorkshire Graduates of Edinburgh University.

The dinner of the Yorkshire Association of Graduates of the University of Edinburgh took place at the Great Northern Victoria Hotel, Bradford, on October 29th. A large number of members, including four ladies, and several guests, were present. The Chair was occupied by Dr. Rabagliati, of Bradford. The chief guest of the evening was to have been Sir Thomas R. Fraser, of Edinburgh, but he was unfortunately prevented by illness from attending. His place was very admirably filled by Dr. J. E. Eddison, of Leeds. The Chairman, in proposing the toast of "The University of Edinburgh," made a delightful speech, tracing the influence of Edinburgh graduates on contemporary thought during the 300 years of the university's existence. Dr. Eddison made an excellent and humorous reply. The toast of "The Yorkshire Association of Graduates of the University of Edinburgh" was proposed by Sir Nathan Bodington, Vice-Chancellor of the University of Leeds, and responded to by Lieutenant-Colonel John Stevenson, D.Sc. Other toasts were "Kindred Associations" and "The Guests." The speeches were interspersed by songs, and a very pleasant evening was spent.

Bradford Hospitals.

In a recent issue of this Journal it was stated that the Lord Mayor of Bradford had appealed for funds to build a new Royal Infirmary and the Royal Eye and Ear Hospital to form an extension to the present building. A controversy has arisen in the Bradford press as to the necessity or desirability of the latter extension. The question was again discussed at the quarterly meeting of the Committee of the Bradford Joint Hospital Fund held on October 28th. Some of the members of the Board of Management of the Royal Infirmary would like to absorb the Eye and Ear Hospital in the new Royal Infirmary, but the board as a whole does not appear at present to regard this as feasible. The surgeons of the Royal Eye and Ear Hospital are of opinion that the accommodation at present in the hospital is insufficient; this opinion has been challenged in the press by a layman, on evidence which is certainly incomplete. It undoubtedly is necessary to improve the accommodation at the Eye and Ear Hospital, and it is urged that the expenditure of a few thousand pounds in this way would not form an insuperable obstacle to an amalgamation with the Royal Infirmary at some future date if this was considered desirable.

Dinner of the Huddersfield Medical Society.

The annual dinner of the Huddersfield Medical Society took place on October 28th. Dr. F. H. Knaggs, President of the Society, was in the chair, and among those present were the Mayor of Huddersfield (Alderman John Holroyd) and the United States Consul (Mr. F. I. Bright). The Vicar of Huddersfield, who replied to the toast of "The Guests," said that doctors and clergymen had a common enemy to fight. All Christians and all scientific men ought to be banded together in order to try to negative the caricatures both of Christianity and science which were found among them at the present time. Mr. Harold Smith, the prospective Conservative candidate for Huddersfield, who also acknowledged the toast, said even the greatest enemies of medicine—even Christian Scientists—must recognize the great and wonderful development which had taken place in the profession during the last hundred years, and every one must appreciate the wide range of scientific knowledge and practical skill it was absolutely essential every member of the profession should acquire before he was allowed to practise. The history of the medical profession during the last fifty or a hundred years was a history of wonderful and fruitful research, of ever-growing knowledge and of devotion and self-sacrifice. The Mayor, in replying to the toast, said during the last few years the death-rate of the town had gone down considerably, and since Alderman Broadbent took up the question of infantile mortality the death-rate amongst infants had decreased considerably. When there was better housing and all the people lived above ground under sanitary conditions, and preventable diseases were done away with, he wondered what the doctors were going to do. Were they going to join the ranks of the unemployed? The toast of "The President" was given by Dr. Crosland, and responded to by Dr. Knaggs, who said that members of his family had on three previous occasions occupied the presidential chair.

BIRMINGHAM.

Reserve of Officers, R.A.M.C.

At a meeting held at the University on October 25th, Lieutenant-Colonel Macpherson, R.A.M.C., addressed the medical students and recently qualified medical men in reference to the creation of a special reserve of officers for the Royal Army Medical Corps. Between 400 and 500 additional medical officers would be required in the event of war, and only about 100 of the reserve formed by officers who have retired before the age of 55 could be calculated upon. The University of Birmingham has about 2 per cent. of the total number of students entering the medical schools of England and Wales every year, and it was suggested that it should provide that proportion of the medical officers for the special reserve. This would mean that Birmingham should contribute ten men. The terms offered to the candidates appear to be easy and liberal. The candidate must not be over 30 years of age, and if selected he will be appointed a lieutenant on probation, and will incur a liability for one year only and then from year to year. He will be required to undergo three months' training at Aldershot in military medical organization. He will be given an allowance towards outfit, will receive the army pay and allowances of his rank during the training, and £20 per annum during three years and a half. At the end of this period he will be eligible for promotion to the rank of captain on fulfilling a month's "refresher" course of training at a military medical establishment. On completing twelve years

service he will be eligible for promotion to the rank of major without undergoing any further training, receiving the £20 per annum up to 40 years of age. He may resign his commission at any time during peace after 40 years of age, or at the expiration of any year's service, by giving one month's notice; but retirement is compulsory for captains at the age of 45, and for majors at 48. In the event of national emergency officers of the special reserve will be liable to be called up for service at home or abroad. The authorities recognize that a medical man well established in practice cannot throw up his practice and proceed on active service, but it is believed that many young, recently qualified men, or men who are about to qualify, would in their early years join this reserve, in the same way as members of the other technical professions join the General Reserve of Officers. Lieutenant-Colonel Macpherson suggested that young medical men should become members of the special reserve, and after they had settled down to private practice could join the Territorial Royal Army Medical Corps. He also pointed out that there would be special advantages to be obtained by a medical student who joined while he was a member of the Officers' Training Corps. Professor Gilbert Barling (Dean of the Medical Faculty at the University) was in the chair, and great interest was taken in the movement.

MIDLAND MEDICAL SOCIETY.

The first meeting for the session 1909–10 was held at the Grand Hotel, Birmingham, on October 28th, when Sir Lauder Brunton, Bart., delivered an address on vascular changes in later life. The chair was taken by the President, Mr. Frank Marsh, and the meeting was largely attended.

WALES.

ASYLUM DEADLOCK.

AT a quarterly meeting of the Carmarthenshire County Council, held at Carmarthen on October 27th, attention was drawn to the deadlock which existed at Carmarthen Asylum. It was impossible for necessary work to be carried out because there was some abstruse dispute about quotas. Special attention was called to the nuisance caused by the sewage discharged from the asylum in the neighbourhood of Johnstown. The Lunacy Commissioners had threatened to report the matter to the Home Office. The following resolution was carried unanimously:

> The county council expreses its entire sympathy with the recommendations of the Lunacy Commissioners, and dissociates itself from any neglect which exists.

PONTYPOOL WATER.

At the monthly meeting of the Pontypool Urban District Council, on October 27th, a letter was read from the Pontypool Gas and Water Company, in reply to a communication from the council, calling attention to adverse reports in regard to the company's water supply by the county analyst for Monmouthshire. The letter stated that samples of water had been submitted to Dr. Thresh, of the London Hospital Medical College, who assured the company that the *Bacillus coli* was absent from both samples submitted to him. The company had taken steps to filter effectually all the water supplied by it, and was further increasing the filtration plant. The council should substitute for the old ball type of hydrants new valve hydrants, as the old type might prove a source of danger whenever it was necessary to turn off the water to effect repairs. In his analysis Dr. Thresh stated that "both waters are of good quality and well fitted for domestic purposes." The surveyor said that, although the company's manager was present when he took the last sample of water, yet the council had received the analysis of the company's sample. After further discussion, the whole matter was referred to the Sanitary Committee.

WEST AFRICAN MEDICAL STAFF COMMITTEE.

Mr. A. Fiddian, of the Colonial Office, who has now been appointed secretary of the Departmental Advisory Committee on the African Medical Staff, is the eldest son of Dr. Alex. Fiddian, of Cardiff. Mr. A. Fiddian held the Draper Scholarship at the University College at Cardiff, and then proceeded to Oxford, where he finished up with a double first. He subsequently entered the Colonial Office, where he was assistant private secretary, a position he held at the time Mr. Joseph Chamberlain went out of office. He also served in a similar capacity under Lord Elgin.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

APPOINTMENT OF PRINCIPAL OF ABERDEEN UNIVERSITY.

THE King has been pleased, on the recommendation of the Secretary for Scotland, to approve the appointment of Rev. George Adam Smith, M.A., D.D., LL.D., Professor of Old Testament Language, Literature, and Theology, at the United Free Church College, Glasgow, to be Principal of the University of Aberdeen to fill the vacancy occasioned by the death of the Very Rev. John Marshall Lang, D.D. The appointment was not unexpected, as for some time Professor Smith's name has been freely mentioned in connexion with the vacancy. It is believed that there were some ten candidates for the Principalship, and rumour has it that neither Lord Pentland nor Mr. Asquith considered that a divinity professor was an ideal candidate, but apparently Dr. Smith's personal merits have outweighed this consideration. The new Principal is well known in Aberdeen where he occupied for a short period the chair of Hebrew in the United Free Church College at the time of the Robertson-Smith controversy, and thereafter for over ten years acted as minister of the Queen's Cross Church, and during that time exercised a potent influence over student life in the city. He now returns to Aberdeen with a world-wide reputation as a preacher, lecturer, and theological writer. The appointment has been received with warm approval both in the university and outside, while it creates a precedent in that Professor Smith is the first United Free Church minister to hold the Principalship of a Scottish university, all previous ministerial occupants belonging to the Established Church of Scotland.

FIFE MINERS.

We are informed that the reference to this matter in the paragraph published in the JOURNAL last week (p. 1309) was incorrect in so far as it implied that all the terms of the agreement there set out had been accepted by the medical profession. We learn that at a full meeting of the Colliery Surgeons' Committee of the Fife Branch of the British Medical Association—which has conducted the dispute on behalf of the local profession—the first five clauses were accepted, but that clauses 6 and 7, dealing with the supply of medicines, were not accepted. We understand that one medical man has allowed himself to be induced to give an undertaking to supply to all his patients among the miners free medicine, and that this action is viewed with strong disfavour by the Colliery Surgeons' Committee.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

THE ROYAL ACADEMY OF MEDICINE.

AT the annual general meeting of the Royal Academy of Medicine in Ireland, Sir Charles Ball was elected President for the ensuing session, and Dr. J. Craig and Sir John Moore General and Foreign Secretaries respectively. As presidents of the various Sections

the following were elected: *Medicine*, Professor W. G. Smith; *Surgery*, Mr. John Lentaigne, P.R.C.S.; *Obstetrics*, Dr. H. Jellett; *Pathology*, Dr. A. H. Benson; *Anatomy and Physiology*, Professor T. H. Milroy; *State Medicine*, Professor E. J. McWeeney. At the same meeting a resolution expressing regret at the loss sustained by the deaths of Professors Alec Fraser and D. J. Cunningham was passed; resolutions in favour of a permanent anthropometric survey being made of all children and young persons, and of the compulsory introduction into all schools, primary and secondary, of physical drill in conjunction with a proper system of medical inspection, were adopted.

Cork District Hospital.

The visiting committee of the Cork Board of Guardians has held an inquiry into a charge of neglect brought respecting the treatment of an infant in the healthy nursery. The mother of the child was sent into the Cork District Hospital suffering from paralysis, which developed within a week after the birth. On arrival at the hospital the infant was sent to the healthy nursery, and remained there for nine days, during which time it became so emaciated that the father had it removed, and it died a few days afterwards. The dispensary doctor gave evidence of the healthy condition of the baby previous to its admission, and its wasted and uncared-for condition on coming out; death was due, he said, to exhaustion and want of proper assimilation of food. During the inquiry it was elicited that there were eighty-seven infants in the healthy nursery, and that there was no responsible person left in charge at night time, and often from 11 p.m. to 6 a.m. these unfortunate infants would have no person to look after them, except the scanty care bestowed on them by what is called a foster mother, who was left to do as she liked with the child or children, and possibly leave them all night without food. The medical officers of the union all spoke in condemnation of the whole surroundings and management of the healthy nursery. They had again and again spoken to the same effect, but the board had never taken any action; the chairman acknowledged that the members of the board were responsible for the death of hundreds of children by not taking action to remedy the condition of things. It was agreed that the medical officers should furnish a report putting forward the suggestions of the medical staff, with a view of improving the existing state of affairs.

Cork Medical and Surgical Society.

The opening meeting for the session of this society took place on October 22nd at the Imperial Hotel. There was a large attendance of members. Professor D. Barry, President of the Society, occupied the chair, and in a few words introduced Mr. Rock Carling, of Westminster Hospital, London, who delivered the opening address on the peritoneum and peritonitis. He dealt with his subject in a most interesting, able, and exhaustive manner, giving a physiological and pathological description of the peritoneum and omentum, and described the surgical treatment in all its phases of peritonitis, more particularly of the acute condition. In the discussion which ensued Professor Yelverton Pearson, Dr. Cotter, Professor Ashley Cummins, and the President took part. On October 23rd the annual dinner of the society was attended by a large number of members with their guests. The usual toasts were drunk.

Health of Belfast.

The exceptionally low mortality and general freedom from sickness still continues. The medical superintendent officer of health reported on October 28th to the Public Health Committee that the death-rate from all causes for the week ending October 23rd had been 12.0, or 11.6 if calculated on the English method; only 1 case of typhoid fever had been notified,

Special Correspondence.

PARIS.

Société Médicale des Hôpitaux: The Pathology of Paralysis in Diphtheria.—New American Hospital in Paris.—Guarantee for Lying-in Women.—Prohibition of Feeding-bottles with Tubes.

At a recent meeting of the Société Médicale des Hôpitaux Drs. Georges Guillain and Guy Laroche read a paper on the results of their research in the pathological physiology of diphtherial paralysis. Clinical facts and experimental research, they contended, proved that paralyses in diphtheria were, in the majority of cases, related to the seat of formation of the toxin, and that the nerve centres were attacked by a process of ascending toxic neuritis, similar to the toxic neuritis which occurred in tetanus and hydrophobia. Morbid anatomy had not afforded any precise evidence as to the pathogeny of paralysis in diphtheria, which by the majority of writers was considered to be due to toxic polyneuritis. Drs. Guillain and Laroche recently had a case at the Cochin Hospital, a man aged 23, who after diphtheria had complete paralysis of the soft palate, with acute bulbar symptoms, hiccough, vomiting, a pulse of only 44 per minute, dyspnoea. He died, and at the *post-mortem* examination the bulb was kept to show by biological experiment the presence, if possible, of toxic bodies. Cerebro-spinal fluid withdrawn by lumbar puncture was clear, and did not show any trace of cellular reaction. No symptoms followed the injection of ½ c.cm. into cranial and peritoneal cavities in guinea-pigs. Inoculation of the central nervous system showed that the poison was fixed in certain parts of the bulb. The bulb and the cervical portion of the cord were washed in running water for twenty-four hours to eliminate the possible action of toxins in the blood; a portion of the bulb at the level of the vagus nuclei was removed, crushed in a mortar, and triturated in physiological serum. The product was divided into three portions and injected into guinea-pigs.

First guinea-pig at 4 p.m. received ¼ c.cm. of this emulsion in intracranial injection. The animal died during the night.
Second guinea-pig received ½ c.cm. of emulsion in intraperitoneal injection. It died in thirty hours.
Third guinea-pig received ½ c.cm. of emulsion in hypodermic injection in right hind foot. It died in seventy-two hours.

Post-mortem examination of the animals did not reveal any sign of infection in the cranial or peritoneal cavities. Cultures of blood from the heart remained sterile. Similar injections given to guinea-pigs with emulsions made from the cervical portion of the cord and the anterior pyramidal portion of the bulb were absolutely negative, and the animals did not show any symptoms. These experiments proved that the toxin was present in the bulb of this patient, and not in other parts of the nervous system. Another series of experiments showed that small fragments of the central nervous system (brain, cerebellum, bulb, and spinal cord), after being placed in contact for sixteen hours with diphtheria toxin, pure and diluted in physiological serum at 1 in 10, 1 in 100, and 1 in 200 parts, and then washed in running water for twenty-four hours before being triturated in a mortar with an equal volume of physiological serum, were able to fix the toxin. The intracranial injection of these emulsions caused the death of guinea-pigs at a dose of ⅛ or ¼ c.cm.; the subcutaneous injection gave one positive result in two experiments; the intraperitoneal injection gave one positive result in five experiments. This series of facts proved, it was held, better than morbid anatomy had been able to do, the central origin of diphtherial paralysis in man.

The new American hospital in Paris was inaugurated on October 28th. Mr. Henry White, the American Ambassador, and the members of the Board of Governors, with the hospital medical board, received the numerous guests, who included M. Doumergue, Minister of Public Instruction, specially delegated to represent the French Government. The hospital is situated at Neuilly, in a large park, two villas having been transformed for the purpose. The main building contains two wards, each of six beds, for males and females respectively, and twelve private rooms, some provided with a bathroom and lavatory. All the wards and rooms are painted

white; the beds and baths are all on rubber-tyred wheels, and are very light and easily moved. The wards are too low in the ceiling; but the operating theatre on the second floor is lofty and has many points worthy of notice. The north wall is formed by an immense pane of glass, which, when it is desired to air the room, can be made to turn on its axis very easily by a simple lever; a long window in the roof also supplements the supply of light; the theatre can be rapidly heated by a large copper plate forming one of its sides, which covers the radiators placed in the thickness of the wall; the operating table is a very practical automatic hydraulic one. The sterilizing room is next to the operating theatre. A large lift can take a patient in bed up to the roof, which is arranged as a terrace, half being a glass-covered verandah. From the top to the bottom of the building is a chute, with openings on each floor, by which the soiled linen in bags is sent down to an underground passage, which communicates with the disinfecting room and the laundry; this is a model of its kind, with all the latest mechanisms for the disinfection and washing of the linen. The corners of the rooms and the furniture have been designed with rounded angles; the electric lights are placed in the walls and the ceilings, covered with a convex glass. The administrative accommodation and the kitchen seem rather small for their purpose. The institution, on the model of the big hospitals in the United States, is free, there being no charge for any of the private rooms or beds in the wards, but donations to the fund will be accepted. Sufficient money has not yet been collected to receive patients, and the board has decided not to do so till it has enough to see its way clear for two years. The recent inauguration was rather to make the existence of the institution more widely known, with the result that more than £1,200 was received in donations during the afternoon.

The French Senate has passed a law guaranteeing to women at the time of their confinement their work and employment. Women will be allowed to stop work for eight consecutive weeks during the time which precedes or follows their confinement without losing their posts.

The Senate has also passed a law forbidding the sale or importation of infants' feeding bottles provided with a rubber tube.

Correspondence.

INTERMITTENT CLOSING OF CEREBRAL ARTERIES.

SIR,—The theory of intermittent arterial spasm as a cause of paralysis, broached in Dr. William Russell's interesting lecture[1] and pursued by Sir Lauder Brunton and Dr. Hobhouse, finds confirmatory evidence in the occasional behaviour of the retinal vessels. In the retina, as in the brain, sudden loss of function may be due to haemorrhage, to embolism, or to arterial spasm, and the latter may, at once or after many temporary attacks, lead to thrombosis. In the retina the diagnosis of haemorrhage presents no difficulty, for we can see the blood. The diagnosis of blockage of an artery, whether by embolism or thrombosis, and whether recent or of old standing, is seldom difficult, for the appearances are characteristic. As between embolism and thrombosis as the cause of the blockage, the diagnosis is often decided, as in the analogous cerebral condition, by a history of previous temporary attacks. It may also be decided by a history of simultaneous temporary disturbance in an area other than the one supplied by the artery which remains blocked. For example: A middle-aged woman during several years has many attacks of blindness in one eye only; it comes on suddenly and is complete while it lasts; it passes off completely within half an hour and is followed by headache. At last there is an attack from which there is no recovery. Examined three days later, the eye presents the retinal changes formerly supposed to be always due to embolism. The diagnosis of embolism, however, is excluded by the history. Again, a police constable, after a heavy meal and a long sleep, awakes blind; the blindness is at first complete in both eyes; one eye recovers in a few minutes, the other remains nearly blind. On examination the retinal artery of the blind eye is greatly contracted. Here the simultaneous complete failure of both eyes forbids the diagnosis of embolism.

Again, I could cite cases of temporary blindness affecting only the upper or lower half of one retina, and ending, after many recurrences, in abolition of the lumen of the corresponding branch of the retinal artery. So long ago as 1884 I published in the *Ophthalmic Review*, under the title "Reflex Amblyopia and Thrombosis," several papers on this subject, and to these I will venture to refer anyone who may care to examine the evidence which the retinal artery can supply concerning functional disturbance through arterial spasm.—I am, etc.,

Birmingham, Nov. 1st. PRIESTLEY SMITH.

SIR,—In Sir Lauder Brunton's interesting letter of October 30th he refers to the investigations of Kussmaul and Jenner in 1857, and their view that spasmodic closure of the cerebral arteries is one of the possible causes of epileptic fits, and he mentions his employment of amyl nitrite, ten years afterwards, in an attempt to cut short a commencing paroxysm.. Acting upon a similar hypothesis, and guided by his researches on the vaso-dilatory properties possessed by the nitrites, it occurred to me, nearly thirty years ago, to try the effect of a drug more slowly acting and less transient in its influence than amyl nitrite. At that time erythrol tetranitrate and its congeners were unknown, so I employed sodium nitrite, and gave it for the purpose of warding off recurrence of the attacks. I and others had some encouraging results, and I published an article on the subject at the time. It was afterwards tried by the late Dr. C. H. Ralfe at the London and by Dr. Murrell at the Westminster Hospitals, and the former read a paper at the Medico-Chirurgical Society detailing his observations. In complying with a request to open the discussion that followed Dr. Ralfe's paper, I advanced the opinion that the results of the use of sodium nitrite lent support to the view that spasm of the cerebral arteries was, under certain circumstances, capable of causing an epileptic fit. I may say that this hypothesis did not then find much favour among the neurologists who were present, but I cannot help thinking that Dr. W. Russell's remarkable lecture and Professor Sherrington's physiological observations in your issue of October 16th, together with the highly interesting letter of Sir Lauder Brunton and the cases adduced by Dr. E. Hobhouse in the JOURNAL of October 30th, will give fresh support to the belief that the part played by intermittent arterial closure in the production of epilepsy is more important than many suppose.

Sir Lauder Brunton in his letter shows that the well-known special sensory disturbances that accompany an attack of migraine may be reasonably explained by supposing that a wave of arterial spasm in its course successively involves the special centres concerned. If this be so, it would appear probable that the various aurae which often precede an epileptic fit may own a like causation. These "warnings" are very diverse in different persons, and often involve the special senses. Sometimes they are highly complex, as in the case of the famous Dr. Gregory, who used to see an old woman with a red cloak who struck him on the head with her stick and made him insensible. Then, again, mental disturbance is often temporarily associated with an epileptic fit, and this would seem to bring such patients into a similar group with those described by Dr. Hobhouse, if regarded from the etiological standpoint of a presumed temporary closure of the arteries in a portion of the brain tissues, with the resulting anaemia of certain centres and consequent paresis and loss of function.—I am, etc.,

London, W., Oct. 30th. W. T. LAW.

SIR,—In the interesting lecture by Dr. William Russell in the JOURNAL of October 16th, he ascribes the temporary paralysis to the closing by muscular action of some cerebral artery. It is difficult to realize that the poor muscular supply of a cerebral artery could close it if it were of normal calibre; surely there must be some previous partial occlusion of the artery by atheroma or gumma.

A few years ago I was sent for to see an old gentleman of 77 who had suddenly lost power in his left arm after a walk longer

[1] BRITISH MEDICAL JOURNAL, October 16th.

than he was accustomed to. When seen the paresis had quite passed off. He was found to have a pulse very easily compressible, a large heart with no visible or palpable apex beat and very poor sounds, no murmurs. A few weeks later he had an attack of diarrhoea, which pulled him down very much, and he developed complete left hemiplegia, from which, however, he recovered in twenty-four hours under the influence of full doses of ammonia and ether added to a bismuth diarrhoea mixture. A fortnight later he walked up a flight of stairs unusually quickly just as I arrived; he was very out of breath, sat down on the first chair, and became paralysed again in arm and leg. His pulse was then very irregular and his heart more dilated. He was given strychnine and a stimulant mixture, and was put to bed; the paralysis passed off in less than two hours, and did not recur while he was under my care and taking regularly a cardiac tonic. Six months later he developed permanent left hemiplegia.

My interpretation of this case was that the right middle cerebral artery was partially blocked by atheroma, and when, from some strain, the flabby heart failed to keep up the blood pressure, sufficient blood was not forced into the narrowed artery to supply the cerebral cortex.

Another case of temporary hemiplegia in a younger man came on while he was walking on the pier on a stormy day. This cleared up in a few days under mercury and iodide, and there has been no recurrence. In all probability the explanation of this was that a gumma was narrowing the calibre of the artery, and the heart was overstrained by walking in a high wind.—I am, etc,

Brighton, Oct. 28th. WALTER BROADBENT.

THE STRUCTURE OF THE PANCREAS.

SIR,—In the JOURNAL of September 11th, in the report of the Section of Anatomy and Physiology of the British Medical Association, is an interesting contribution entitled, The Structure of the Pancreas in Relation to Function, by Messrs. J. S. Goodall and H. G. Earle. These authors give an account of the structure of the pancreas in elasmobranch fishes. Their work appears to have been done mostly upon *Mustelus*, and it is gratifying to note that they have arrived at the same conclusions as did Mrs. Thompson and myself in regard to the structure of the pancreas in these fishes, and have been enabled fully to confirm the views expressed by us as to the anatomical relationship existing between the zymogenous tubules and the islets of Langerhans.

Our results were published in the *Proceedings of the Physiological Society*, June 2nd, 1906; *Journal of Physiology*, vol. xxxiv; *Internationale Monatsschrift für Anatomie und Physiologie*, Bd. xxxiv, 1907: *Proceedings of the Physiological Society*, May 18th, 1907; *Journal of Physiology*, vol. xxxv; *Transactions of the Royal Society, Canada*, 1907–8; and furnished abundant evidence, as do the results of Goodall and Earle, in favour of the view expressing continuity of structure in the pancreas.

Throughout vertebrates we found that the islets frequently show traces of an alveolar arrangement. The islet columns are often in complete anatomical continuity with the surrounding zymogenous tubules, and all kinds of transition forms are common. In birds, reptiles, and fishes a distinct lumen within the leptochrome islet area can sometimes be detected.

In mammals (dogs and cats), birds (pigeons), and amphibians (frogs) the effect of inanition is markedly to increase the amount of the islet tissue at the expense of the zymogenous tissue.

After a period of inanition, direct continuity and transition forms are even more marked than in the normal animal. If, after a period of inanition, the animal be restored to its normal condition of nutrition, the pancreas likewise returns to the normal, and the presumption is that alveoli are reconstructed from islets.

Confirming the observations of Dale,[1] we found that an increase in the amount of islet tissue may also be induced by exhausting the pancreas with secretin.

We further expressed the opinion that, although the islets of Langerhans cannot be regarded as in any sense a tissue *sui generis*, their abundant capillary supply and the nature of their protoplasm suggest that they may be localized areas of the zymogenous tissue, modified by physiological conditions, and set apart for the purpose of a special internal secretion.

In regard to the pancreas in elasmobranch fishes, it may be well to quote from our paper in the *Proceedings of the Physiological Society*:

> The intimate relation between duct and secreting cavity is of such a nature that it is not always possible to draw any hard-and-fast line between the individual cells of the two structures. This has been pointed out by Laguesse in the case of the ophidians and the teleostean fishes. The developmental and structural relationship between ductules and "clear areas" or islets in elasmobranchs has been fully recognized by Diamare, Laguesse, Helly, and other observers. The work of Laguesse, Dale, and ourselves upon the islets of various groups of vertebrates has shown a similar relationship between islets and zymogenous tubules. In elasmobranchs, and especially in *Mustelus*, we see exemplified in a very interesting manner a primitive state of affairs in which ductule, islet, and zymogenous tubule reveal themselves as portions, variably modified, of the same morphological entity. Thus the connexion between "clear areas" or islets and ductules is obvious, or at any rate very readily perceived. The external layer of cells of the ductules can be seen to be gradually merged into the zymogenous tubules, and occasionally typical zymogenous cells can be seen scattered among the cells of the ductules. Further, transitions are frequent here, as in the higher vertebrates, between the clear islets and the zymogenous cells. These transitions occur naturally in the region where ductule with its masses of islet cells is becoming continuous with, or merged into, the zymogenous tubule.

It is not clear whether Goodall and Earle have seen our papers. As the account given in the JOURNAL is presumably only an abstract, it may well be that references to literature have been reserved by these authors for a fuller memoir. In any case, it appeared to me desirable to point out at this time how close is the correspondence between the results obtained by the workers at Middlesex Hospital and those previously obtained by us.

As for the main point involved in these investigations—namely, the question as to the morphological independence of the islets of Langerhans—the balance of evidence seems overwhelmingly in favour of an intimate morphological relationship between islet and tubule. The question of a functional relationship raised by Goodall and Earle is one upon which it is too early to express a dogmatic opinion.—I am, etc.,

Winnipeg, Oct. 2nd. SWALE VINCENT.

THE ULTRA-MICROSCOPE.

SIR,—Your note on the ultra-microscope, in the JOURNAL of October 30th (p. 1299), leads me to call attention to the essential difference between dark-ground illumination and the ultra-microscope, a misunderstanding with regard to the latter term having arisen through the use of this word by not a few French and other workers in a sense quite different from that originally intended, which is liable to cause no little confusion amongst workers who may be attracted by published accounts of new methods of examining unstained bacteria and spirochaetes. As I have not had an opportunity of referring to the original paper by Dr. J. Comandon, I write with some reserve; but I think he is probably referring to the use of what is known by English and German microscopists as the dark-ground condenser. This method is merely an adaptation for use with high powers of the old spot-lens or paraboloid or its modification by means of a spot placed beneath an ordinary condenser. The principle of dark-ground illumination is simple enough. The spot beneath the condenser is of such a size as to cut out a solid cone of light equal to the total aperture of the objective used, so that the field of view appears quite dark. But the condenser has a wide angle, and its marginal rays, of too great an aperture to enter the objective, are caught and refracted by, let us say, unstained bacteria placed upon a slide on the stage, and thus the bacteria become evident as brightly lit up objects shining upon a dark background. It will be evident that the spot must bear an exact ratio to the aperture of the objective used, and must be changed if an objective of a different aperture is required.

So far I have assumed that an ordinary condenser has been used, with a movable spot beneath it, but when we use objectives of high aperture we find that the construction of such a condenser does not give good results with objectives of more than medium aperture—say about 0.6 N.A. Quite recently, therefore, special condensers have been made, which by reflection from surfaces instead of by refraction, are capable of giving satisfactory results with even the highest powers, such as a $\frac{1}{12}$ in. oil immersion. Such condensers need careful centring, and will

[1] *Phil. Trans.*, Ser. B, vol. cxcvii, pp. 25–46, London, 1904.

only work through a slide of definite thickness, but the principle is the same as before, though the method of application differs somewhat. The dark-ground condenser is of high aperture, but the central cone of light, amounting to 1 N.A., is stopped out by a fixed central spot, so that rays above 1 N.A. alone pass. An ordinary immersion objective of 1.3 N.A. can be used, but as its aperture must be less than 1 N.A. it is stopped down to this aperture by a diaphragm behind its posterior lens. This can be done to any existing lens without interfering with its use for other purposes, by means of a removable diaphragm or funnel. Again the objects become visible as bright objects shining on a dark ground.

This method has been much used in the study of living bacteria, and is a great advance upon the old "hanging-drop" method. It has been proved of service also in studying spirochaetes, but the important point I wish to make is that it is a means of *annular* illumination, which is of little service for making visible objects which are too *minute* to be visible by ordinary methods, though it is of service in studying minute objects which are too *transparent* to be visible by ordinary methods. It is not really difficult to use.

It cannot be too clearly understood that the word "ultra-microscope" belongs by priority and by its evident meaning to a method adopted by Siedentopf and Zsigmondy to a special apparatus designed by them for making visible particles to which the word ultra-microscopic may really be applied, namely, those which are beyond the limits of microscopic resolution, say less than 0.25 μ. Here an exceedingly narrow and powerful beam of light, collected from a slit and arrangement of lenses, is directed, from one side only, at right angles (and not obliquely) into the field of view, and the resulting image is merely a diffraction effect, and does not attempt to show resolvable structure. The apparatus is somewhat elaborate (see *Journal of the Royal Microscopical Society*, 1903, pp. 573–578), and by its means Dr. Zsigmondy has made many interesting investigations into the structure of colloids, the results of which he has recently published in a book entitled *Colloids and the Ultra-Microscope*.

It is, therefore, advisable to draw a sharp distinction between "dark-ground illumination" and the "ultra-microscope," the apparatus being distinct.—I am, etc.,

F. SHILLINGTON SCALES, M.A., B.C., F.R.M.S.

Cambridge, Nov. 1st.

"CHRISTIAN SCIENCE AND SPIRITUAL HEALING."

SIR,—In the JOURNAL of October 23rd you adduce the outcry of the Christian Scientists at Mr. Stephen Paget's address to the Church Congress as a proof that they are hard hit. Judged by this test, the medical profession is, at least, slightly uneasy. You, Sir, at any rate, hardly allow a week to pass by without holding up to scorn and ridicule the sayings and doings of the "spiritual healers." It is certainly true, as you have said, that from time immemorial practitioners of the healing art have employed suggestion as a curative agent; it is also no doubt true, as Mr. Stephen Paget points out, that the word Hypnotism will be found stamped on every page of the evidence of Christian Science cures.

But the fact cannot be denied that, with a very few exceptions, we do not practise suggestion in a systematic and scientific manner, and that the vast majority of medical practitioners—in this country, at any rate—have no knowledge of hypnotism, give it no serious thought, do not even know that the practice of it is compatible with scientific respectability. And the reason for this is not far to seek.

Professor James, in the course of an address to a philosophical association, touching on the manifestations of Christian Science and so-called metaphysical healing, said, "Our scientific education has unfitted most of us for comprehending the phenomenon," and I think the same remark applies to medical education—the physical side is emphasized, the mental side is practically ignored.

The scientific practice of suggestion (which includes hypnotism), no less than the proper comprehension of many disorders of health, demands a sound psychological training; yet, as far as I know, in this country no facilities are offered to medical students for acquiring any training in mental science. The time has, I think, come when the general practitioner ought to be in a position to understand certain well-ascertained laws of mental life and to practise mental therapy along with physical therapy in a scientific and definite way, and this can only come to pass when the student has been provided with the right kind of training which must have its basis in psychology.

Until such provision is made, the public demand for mental therapeutics will be for the most part supplied in an unscientific way by people who have no scientific qualifications or training for the work—a state of things which is undoubtedly fraught with a certain amount of danger.—I am, etc.,

Edinburgh, Oct. 26th. H. TORRANCE THOMSON.

⁂ We agree with our correspondent. Our position has always been that the psychical factor was too much neglected by the medical profession. But when the "sayings and doings of the spiritual healers" seem to us foolish or false, or both, we think it our duty to expose their true character.

COLOUR-BLIND ENGINE-DRIVERS IN ENGLAND.

SIR,—I was lately informed by a medical man who examines men for the railway service for one of our colonies that numerous cases have come before him of men who have been working on our railways and passed the wool test who have failed when he examined them with the lantern. I know of many instances. Many of our railway companies still use the "card test." This test dates from 1868, and consists of naming four squares of colour—red, green, blue, and yellow—occupying definite positions on a card. It is the most extraordinarily inefficient test I have come across. I have often examined colour-blind men with this test and never been able to reject one with it. The superintendent of one railway company informed me that they had carefully examined all their men for years with this test, and had not yet found a case of colour blindness. He added: "Colour blindness must be very rare."—I am, etc.,

Hendon, Nov. 2nd. F. W. EDRIDGE-GREEN.

AMBULANCE LECTURES AND VOLUNTARY AID DETACHMENTS.

SIR,—I should be glad to ascertain through the medium of your columns what is being done, or has been done, with regard to the giving of ambulance instruction in the different parts of the country.

Some time ago—I think it was at the Leicester meeting—a resolution was passed by the Representatives to the effect that all ambulance work should be looked upon as a matter of business, and a notice to that effect was duly received by the honorary secretaries of the Divisions.

Acting on these instructions, the members of the Cleveland Division promptly decided that in future a fee must be charged for ambulance instruction and examination. The fee was fixed at a nominal value, as it was felt that the profession did not wish to make money out of the St. John Ambulance Association, but only to have the principle recognized.

Since adopting this attitude we have had several interviews and much correspondence with the local representatives of the St. John Ambulance Association, who say that their association can not afford to pay a medical fee; and I am afraid medical men here have got into bad odium so far as regards ambulance work; in fact, it has been hinted that we are lacking the common feelings of humanity by withholding gratuitous instruction.

We have now before us, and shall be asked to undertake, a national system of instruction in ambulance work and nursing in connexion with the British Red Cross Society's scheme of voluntary ambulance detachments as an adjunct to the Territorial Army.

I take it that these detachments will consist of fifty to sixty men with their staff of officers. Their duties will be to render first aid, improvise stretchers or ambulance wagons from farmers' carts, etc., to form bearer companies, to work ambulance trains, and, in fact, all duties connected with first aid to and removal of the wounded from the field of action. All these men must be trained in ambulance work and hold certificates. The same or similar conditions apply to the voluntary nursing detachments in connexion with women.

From this it will be seen that an immense amount of work in ambulance instruction will be required.

Is this work and instruction to be voluntary on the part of medical men? Are we as a profession once more to have our brains sucked and pockets depleted—this time on the plea of patriotism?

I understand that medical men and medical women are to be asked to volunteer as officers of these detachments and to undertake their instruction in hygienic, ambulance, and nursing duty. By all means let us volunteer as officers, and thereby show our loyalty and our patriotism, but there our service should stop. When it is a matter of instruction, it becomes a matter of business—professional business—and ought to be treated as such.

It behoves the profession to move warily in this matter, and at once take steps to ensure uniformity of action in different parts of the country.

Medical men in the Cleveland district have been singled out for invidious comparison with other districts where ambulance work is still gratuitous. Why should we have to suffer because we have carried out the recommendation of the Association? What has been done in the other 140 or 150 constituencies who were represented when the resolution advising that gratuitous ambulance work should cease was adopted?

Would it not be possible for the Organization Committee to take immediate steps to ascertain the views of the Divisions, and then advise the line of action to be taken so that a definite policy might be followed? It would be a blot on our organization if different Divisions adopt different policies with regard to this scheme of the British Red Cross Society. Judging from the differences of opinion expressed at our Divisional meeting on this subject, I should imagine this letter will lead to ample correspondence. If it leads to some uniformity of action it will have served its purpose.—I am, etc.,

R. E. Howell,

Middlesbrough, Oct. 31st. Representative of the Cleveland Division.

THE DOCTOR AS A PHILANTHROPIST.

Sir,—Dr. Todd-White writes in a most moderate and courteous tone, but I certainly do not agree with him in some ways.

Let me put my proposition in another form. Whatever may be the hope of those entering the profession as a rule, I hoped on entering to make a decent living. I found that I was in exactly the same position as any other person with a commodity for sale, that I must charge a proper price to all, or make one set of customers pay for those who did not pay. I found in a very short time that the latter was a radically unsound policy, and that in order to deal honestly with my clients I must insist on strict business principles. Unless I was able to make a free gift to the public I refused to do so, as I was bound to make my other clients pay for that which I gave away but could not afford.

This is exactly the position of a large proportion of the medical profession to-day who are called upon by the public to perform gratuitous services of all sorts that have now assumed such large proportions that the profession are practically bankrupt, or are not giving their paying clients a fair bargain.

I see no reason whatever why the medical profession should be less businesslike or be afforded less protection than solicitors.

I am convinced that the bulk of the work done gratuitously is done unwillingly, and only for some indirect gain.

What right have the public when an accident occurs to ring up half a dozen medical men requesting their services? How many times has Dr. Todd-White been called out to an accident and found three or four other men also on the spot?

I was for a time the only available doctor for some miles round, and found that, once I announced my intention of refusing to go to accidents unless my fee was guaranteed, that in the first place most of the frivolous and unnecessary calls stopped, and any serious accident was paid for by the police or the person requesting my services, and, rightly or wrongly, I was not abused. Further, any gratuitous work was done as a distinct act of charity, and only as such, and was called by its proper name—*charity*.

Many objected to the idea, and, when possible, went elsewhere, ran up accounts they could not hope to pay, and blackguarded the man who sent them far more than they did me for not charging them and calling a spade a spade.

Why, because we as a profession are able to relieve suffering, we should be called upon to do so for nothing, I fail to see. If we are bound to relieve suffering, pay or no pay, why should not the principle be extended to those who sell food and raiment, and on application they should be compelled by public opinion and fear of discredit to relieve the distressed? Or, why are solicitors not compelled to protect the interests of the widow and fatherless free or fall into public disgrace?

I have worked in several large practices amongst the poor, and have no hesitation in saying that the care I was able to give each case was, from pressure of work, not worth the money paid, small as was the sum. A guardian of the poor a few days ago, when speaking of a Poor Law appointment, remarked, "You doctors are a —— cheap lot; there's always some fool among you ready to work for less than the other chap."

Let us give up cant about charity and the noble profession, and combine to give the public a fair bargain, and live as an educated highly trained profession should. The bulk of us enter the profession to make a living, and very few of us work for nothing from any other motive than self-interest of some sort. Personally, I announced my intention of running my practice on business lines, and never had any cause to regret it.—I am, etc.,

September 26th. Anglo-Colonial.

THE POOR LAW REPORT AND THE SANITARY MEDICAL SERVICE.

Sir,—Dr. Greenwood objects, in his letter published in the Journal of October 23rd, to the statement that under the Minority scheme the total remuneration received by the medical profession would be increased. I understand that the medical portion of this scheme proposes to unite under the sanitary authorities all arrangements in which tax or rate-raised money is spent on the prevention and treatment of disease.

Nearly every medical man treats numbers of poor persons without any hope of payment, because he does not not know what would become of them if he did not do so; and I believe that with the Minority scheme he could send such unpaid work to a department able and willing to deal with it, where it would be paid for, and become an additional remuneration to the medical profession.

Moreover, Dr. Greenwood seems to take no account of the present greatly changed conditions of medical work compared with those prevailing some years ago. These would probably be more apparent if we consider the changes which have taken place in such industries as weaving or engineering since the introduction of steam and mechanical power: previously all such work was done by small tradesmen in small workshops, as a result of great labour, and at a comparatively large cost, and things produced by such work, except articles of the most elementary description, were only available as luxuries for the rich. With machinery these craftsmen were forced into factories, their work became specialized, the output enormously increased, and the public at large on account of the diminished prices are now able to possess articles which before the introduction of machinery were only luxuries for the rich—the skilled workman with his regular hours, settled wages, trades-union protection, has a more comfortable position than the small tradesman whom he displaced, and the total sum of money paid to his class has tremendously increased.

The great medical discoveries of last century has caused the development of large institutions in which medical labour is organized and specialized corresponding to the factories, and for the bulk of the population a great part of the most important medical work of to-day is done in them—in fact it seems that only by such means would it be possible to place the benefits of these discoveries effectually and economically within the reach of those who could not adequately pay for them.

The benefits arising to the community from the development of this system, as judged by their improved health and comfort, is incalculable.

The economic gain to the medical profession is surprisingly little, compared with that which has accrued to

the ordinary craftsman from the introduction of machinery; the doctor gets in such institutions either no pay at all or only the pay of an apprentice—this is the second class of unpaid or gratuitous work of which Dr. Lyster complains.

In dealing with disease, especially amongst the poor, who are the most diseased section of the community, elaborate organization for its cure and prevention is absolutely necessary, and it is because an increasing number of people recognize this that many people are willing to spend in travelling to a hospital or sacrifice in loss of time more money than would provide them with the services of a doctor at home.

As the Minority Report would, in my opinion, tend to develop institutions on similar lines to these which the public are now demanding, in which the medical staff would be paid, and give members opportunities for leisure, and combination which would enable them to make more satisfactory terms with their employers than at present prevails, I think that the additional income accruing to medical men from these sources would materially increase the total amount of money received by medical men in this country as a reward for their labours.—I am, etc.,

Barking, Oct. 29th. A. BYGOTT.

HOME RULE FOR LONDON.

SIR,—May I again trespass on your space, for the last time in this connexion, to reply to the comments on my letter of last week's issue. To take Mr. Wallis's letter first: He says, "It is, of course, not to be expected that any one from the provinces who has, or hopes to have, a hospital appointment will do otherwise than decry any attempt to improve the position of London as a great medical centre." Why not? Does this description not apply exactly to himself who graduated at a provincial university and now holds office in a hospital which is part of one of the medical schools of London University?

I grant that even though he and I differ as to the means whereby progress is to be made that he is earnest and disinterested in his views. May not others be equally impartial?

As I presume I am the "any one" above alluded to, I have not, nor do I desire, a hospital appointment in any of the affiliated schools, my course is mapped out otherwise; but I should, as much as Mr. Wallis, like to see all the "various examining bodies wheel into line," though I do not wish to see London University take one pace to the rear, which lowering of the standard would entail.

In reply to Dr. Elliot-Blake I regret that I have not had the pleasure of reading his book, but I think if he will peruse my letter more carefully he will see that I give the palm for market value under existing hospital-committee regulations, not to the M.D.London, but to the M.R.C.P. and F.R.C.S., which can only be obtained through the Conjoint Board; and that I consider the market value of the M.D.London as "a means to an end" is *low* by comparison, and that is exactly my point, which Dr. Elliot-Blake seems to have missed.—I am, etc.,

London, N.W., Nov. 1st. HORACE WILSON.

CLINICAL TEACHING.

SIR,—With reference to clinical teaching in hospitals, I think it may be fairly said that it hardly equips the student sufficiently for general practice, admirable and necessary as it is for him; but if it were supplemented by a course of pupilship to a general practitioner, as in former days, the results would be more satisfactory for the young man commencing general practice.

Clinical teaching in hospital resolves itself into demonstrations on well-defined cases in the wards and elsewhere, and the student passes through the various special departments during his course, and for the time is absorbed in that branch where he is working; so that given a case of a woman complaining of pain in the lower part of the body, the student in the gynaecological wards naturally thinks of uterine or ovarian disease; the student in the surgical or medical wards naturally thinks of the appendix, bladder, or of intestinal obstruction, because being in one case in the gynaecological wards he thinks gynaecologically, and in the other cases, again, he thinks according to his appointment, that is, either surgically or medically to the exclusion of all other teaching.

It is because he has not to diagnose the case before it reaches the proper ward that he thinks particularly and not generally. Now the general practitioner meeting such a case as described above considers the case not as an interesting pathological problem, but as a living being who has pathological possibilities certainly, but in addition a stomach and bowels into which is despatched frequently a very miscellaneous collection of articles calculated to cause as much distubance as any microbe. Generally, therefore, if he is wise, he will make inquiries about the diet of his patient, and in most cases will find that a purgative will remove the pain, reveal the cause, and relieve the mind both of patient and doctor. Why this difference? It is because the general practitioner looks at the case generally, being taught to do so by experience, taking note of the local signs and symptoms and also of the general appearance, asking himself whether the patient looks ill, haggard, or feverish, and whether his statements are consistent with real or feigned disease. In fact, the student requires a better acquaintance with the earliest signs and symptoms of disease, wherever it may appear.

In conclusion, I will say that Mr. Moynihan's advice to study the "inaugural symptoms" will be found to be most beneficial when in general practice for the first time.—I am, etc.,

Althorpe, Oct. 25th. J. F. ROBERTSON.

LONDON HOSPITALS AND SCHOOL CHILDREN.

SIR,—Under the above heading, in the *Times* of November 3rd, a proposed arrangement between the London County Council and various hospitals is outlined.*

May I point out, in regard to St. George's Hospital, that the children to be seen are to be selected necessitous cases, who are unable to provide adequate treatment for themselves, either through a private general practitioner or otherwise, there being a double safeguard that only necessitous children are treated—first, by an inquiry by the London County Council, and, secondly, one by the hospital almoner, for whom the hospital reserves this right.

I trust you will be good enough to insert this, as this distinction makes a great difference, and the statement as it appeared may give rise to serious misunderstanding.—I am, etc.,

A. WILLIAM WISE,
Treasurer and Chairman, St. George's Hospital, S.W.

November 3rd.

* See page 1374.

The Services.

EXAMINATIONS FOR PROMOTION, R.A.M.C. (TERRITORIAL).

AN officers' class for promotion R.A.M.C.(T.), Examinations A and B, is being held at 51, Calthorpe Street, Gray's Inn Road, W.C., on Tuesdays and Thursdays, from 4.15 to 6.15, and on Fridays from 7.30 to 9.30. It is open to all officers of the First and Second London Divisions and London Mounted Brigade. Officers wishing to join should apply to the Adjutant, R.A.M.C.(T.), School of Instruction, at the above address.

AT meetings of the South Shields Town Council on October 11th and October 16th a proposal brought forward to reduce the rates by reducing the salaries of nearly all the responsible officials of the council was eventually rejected by a majority of over 3 to 1. Among the opponents of the measure were the Labour representatives, some of whom indicated a belief that the motion was merely a move on behalf of property owners. This fact, it was suggested, explained why the health officer and his staff, whose work necessitated their making suggestions inconvenient to property owners, had been included in the motion. It was admitted that the salaries of some officials had been much increased of late years, but it was shown that the slow increase of the medical officer's salary to £500 was in virtue of a contract made with him at the time of his appointment; the amount could not be reduced unless he were given notice to terminate the contract and a new appointment made. In the course of the debate it was shown that South Shields was among the least indebted of the great borough councils, and that neither the rating of the town nor the salaries paid were above the normal.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

Appointments.

The following appointments are announced: *Additional Demonstrator of Physiology*, Mr. V. H. Mottram, M.A., Trinity College. *John Lucas Walker Students*, W. McDonald Scott, M.B., Ch.B., B.Sc.Edin., and Constant W. Ponder, M.A., M.D., Emmanuel College. *Curator Botanical Museum*, H. H. Thomas, B.A., Downing College. *Superintendent Museum of Zoology*, C. L. Boulenger, B.A., King's College. *Studentship in Medical Entomology*, Gordon Merriman, Trinity Hall.

Examinations.

The following candidates have been approved at the examinations indicated:

First M.B. (*Part I, Chemistry*).—K. Bellwood, W. K. Bigger, H. A. Crouch, J. L. Davies, H. P. Dawson, C. D. Day, A. N. Drury, W. H. Edgar, H. A. C. Goodwin, L. M. Ingle, L. H. James, J. B. Leather, E. C. Malden, S. C. Miskin, D. F. A. Neilson, S. H. Rhodes, E. J. Selby, T. H. Somervell, P. Stocks, C. R. A. Thacker, W. G. Thompson, T. T. B. Watson, W. R. Wilson, F. B. Winfield.

First M.B. (*Part II, Physics*).—A. C. Ainsley, K. Bellwood, W. K. Bigger, C. C. Brewis, A. A. Cockayne, H. A. Crouch, J. L. Davies, H. P. Dawson, A. N. Drury, L. M. Ingle, S. H. M. Johns, J. B. Leather, E. C. Malden, E. W. Mason, S. C. Miskin, E. J. Selby, T. H. Somervell, G. E. Spicer, P. Stocks, C. R. A. Thacker, T. T. B. Watson, E. Watson-Williams, W. R. Wilson, F. B. Winfield.

First M.B. (*Part III, Biology*).—H. S. Bartlett, W. K. Bigger, H. R. Buttery, B.A., G. F. Clifton, H. A. Crouch, H. P. Dawson, A. N. Drury, L. M. Ingle, M. L. Loveless, J. B. McFarland, E. C. Malden, S. C. Miskin, D. M. Muir, D. F. A. Neilson, S. D. Nurse, R. A. W. Proctor, S. H. Rhodes, J. W. Sewill, H. N. Stafford, P. Stocks, C. R. A. Thacker, W. G. Thompson, E. Watson-Williams.

D.P.H. (*Both Parts*).—L. A. Clutterbuck, R. R. Elworth, T. S. Hele, F. J. Henry, E. L. Hunt, R. B. Khambata, N. P. O'G. Lalor (Major, I.M.S.), R. McC. Linnell, G. H. K. Macalister, A. S. M. Macgregor, Alice Oberdorfer, J. W. Parker, A. H. Parkinson, F. J. Pierce, S. Rowland, Mabel Russell, G. H. Skinner, R. M. Srinivasa, D. Thomson, G. D. H. Wallace, A. G. Wells.

Degrees.

The following degrees have been conferred:

M.D.—W. H. Brailey, Queens'.

M.B., B.C.—W. M. Jeffreys, Trin., C. C. Holman, Gonv. and Cai., A. V. Poyser, Magd., L. T. Dean, Sid. Suss.

B.C.—J. P. Buckley, Trin., P. G. Fildes, Trin., E. T. Shann, Gonv. and Cai.

UNIVERSITY OF LIVERPOOL.

The total number of undergraduates registered in the Medical Faculty at the beginning of the present session was 132. These include 23 new entries for degree courses, and 8 new entries for diploma courses. For the diplomas in tropical medicine and public health there have been 14 and 13 new entries respectively.

UNIVERSITY OF EDINBURGH.

The Medical Curriculum and Examinations.

At the meeting on October 29th Dr. Norman Walker moved the following motion:

> To remit to the Business Committee to consider and report as to the desirability of procuring by an amending ordinance of the university court, or otherwise, further improvements in the medical curriculum and examinations.

In the ccurse of his remarks Dr. Walker said that the question of medical examination was by no means special to Edinburgh at the present time; he referred the council to the report of the Pathological Club, whose further report and suggestions, the Business Committee stated, were of much assistance towards the framing of the recent ordinance. (A note on this report, giving the recommendations in full, was published in the Journal of October 23rd.) Dr. Walker entered into some of the details of the recommendations, and said that a great difficulty arose from the fact that under the existing ordinances the subject of anatomy split up the winter session. He pointed to the advantage that would follow if study were to begin three months earlier. All were anxious that the students turned out from Edinburgh should be the best product of medical education anywhere, and there was no antagonism to the existing state of affairs. All that was wanted was to make the fullest possible use of the great advantages held out in Edinburgh. The motion was seconded by Dr. James Ritchie, and, after a few remarks by Professor Harvey Littlejohn, was approved.

NORTH WALES COLLEGE.

At the half-yearly meeting of the governors of the University College of North Wales, Bangor, held at Chester on October 27th, Lord Kenyon, who presided, said the new annual Treasury grant of £4,000 was a great relief to the finances. That morning the council had set apart about half of it for increasing the salaries of the professors. That was an act of justice too long delayed. The Drapers' Company had made a further grant of £10,000 to the building fund. In the English and philosophy department the professors had reported that students came up with perhaps an insufficient preparation, and thought the college matriculation examination might be improved. The professors frequently deplored the number of examinations in secondary schools, and anything the governors could do to lessen the number and to increase individual attention was a matter worthy of consideration. In the discussion Professor James Gibson said that the frequent examinations did not encourage a scholar to make the best use of his intellectual faculties; intelligence was inevitably subordinated to the effort of mere memory. Sir Harry Reichel said the tendency of a highly specialized system of examination like the Central Welsh Board system was to become more severe in its demands every year. That difficulty must be dealt with soon. The Court of Governors agreed to instruct the committee attending the Modern University Congress to represent their views upon this subject.

THE ROYAL UNIVERSITY OF IRELAND.

The Closing Scenes.

The last meeting of the Royal University of Ireland, which has now been replaced by the two universities, the National University and the University of Belfast, was held at 3 p.m. on October 29th. Before that hour the undergraduates had taken possession of one of the galleries where their exuberant spirits found expression in the singing of songs, the blowing of bugles, the throwing of rice and flour, and, finally, of squibs. Ultimately while the new graduates were being presented for degrees, a hose pipe which had been used in unavailing attempts to lassoe them, was connected with a hydrant, and most of those who had withstood the squibs retired under umbrellas before the water.

The Vice-Chancellor, Sir Christopher Nixon, presided, but the address which he delivered was unfortunately almost inaudible owing to the tumult. After expressing his regret at the absence of the Chancellor (Lord Castletown), Sir Christopher Nixon was understood to pay an appropriate tribute to the services of former chancellors and vice-chancellors. He then stated that the senate at its last meeting had decided that it would be appropriate that the university should present honorary degrees to those members of the senate who had not yet received that distinction. Among those to receive the degree of LL.D. under this decision of the senate were Sir Francis Cruise, M.D., Dr. John Walton Browne, Dr. R. W. Leslie, and Dr. John Campbell. At the same time the honorary degree of D.Sc. was conferred on Professor Alexander MacAlister. Having referred to the spirit of toleration which had characterized the organization of the university, the Vice-Chancellor said that he was authorized to confer the honorary degree of LL.D. on certain distinguished graduates, including Dr. W. R. Huggard of Davos Platz, Switzerland. Turning then to the subject of the new universities, Sir Christopher Nixon said that the gratitude of Irishmen was due to the distinguished statesman, Mr. Birrell, for having carried legislation to establish for the first time in the history of Ireland a university for Catholics. The Royal University, though it had fallen short of the ideal, had exercised an important influence on higher education in Ireland; it had opened its portals to women, and during its existence there had been phenomenal activity with respect to intermediate education in Ireland, culminating in the record return of candidates for examination during 1909; they numbered 11,332, the number of passes being about 55 per cent. The university had provided substantial rewards and encouragements, and had placed its distinctions and honours within the reach of all. In the various professions, both at home and abroad, names of Royal University graduates could be cited as holders of positions of rank and influence; it had given encouragement also to a large number who prepared themselves for the position of professors and lecturers in the various colleges connected with it. Its constitution had compelled it to concentrate its attention upon examinations, but it had set itself to maintain as high a standard as was possible. In the profession of medicine the university had been pre-eminently successful, and could claim in the strictest sense to be a teaching university. The defects in its organization, however, and the too great influence on its work exercised by the examination system had developed an intense feeling that it could not be maintained without reform. The university had fulfilled its destiny, and the two universities would bring to fruition the seed which it had sown.

The following have been approved at the examinations indicated:

M.D.—J. Finnegan, S. J. Killen, C. B. Pearson, S. B. Walsh, T. Walsh, S. H. Whyte, J. E. Wilson.

Diploma in Mental Diseases.—D. Gillespie.

The following have been awarded honours in one or more groups of the examination indicated:

Final M.B., B.Ch., B.A.O.—*E. G. Kennedy, *J. J. Gilmore, *J. B. Butler, †J. M. M'Cloy, *W. Dickey, †T. Scanlan, *B. Byrne, *S. R. Campbell, †J. A. Hanrahan.

* First class. † Second class.

(Mr. E. G. Kennedy also received exhibitions, valued £21 each, both in the medicine and surgery group, and Mr. B. Byrne received the exhibition in the midwifery group.)

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary quarterly comitia was held at the college on Thursday, October 28th, the President, Sir R. Douglas Powell, in the chair.

Membership.

Wm. David Keyworth, M.B., B.C.Cantab., and Charles Joseph Singer, M.B.Oxon., L.R.C.P., were admitted Members of the College.

Licence.

The Licence of the college was granted to 104 gentlemen.

Jenks Memorial Scholarship.

Philip Dennis Scott was elected Jenks Memorial scholar.

Parkes-Weber Prize.

The following was announced as the subject for the Parkes-Weber Prize for the year 1912: "The influence of mixed and secondary infections upon pulmonary tuberculosis in man, and the measures, preventative and curative, for dealing with them."

Communications.

The following communications were received: (1) From Professor Emil Fischer, thanking the college for the award of the Baly medal to him. (2) From the Secretary of the Royal College of Surgeons, reporting proceedings of the Council of the College on July 29th and October 14th last.

International Medical Congress.

A report was received from Dr. Pavy, college representative at the International Congress at Budapest, on the proceedings of the Congress. On the motion of the President, a vote of thanks was passed to Dr. Pavy by acclamation.

Imperial Cancer Research Fund.

The resignation of Dr. Pye-Smith as a member of the Imperial Cancer Research Fund was accepted, and Dr. Newsholme was appointed a representative of the college in his place.

Committee of Management.

Dr. Norman Moore, who retired by rotation, was re-elected a member of the Committee of Management.

Examinations.

The quarterly report of the Examiners for the Licence on the results of the July examinations was received.

Library.

Books and other publications presented to the library during the past quarter were received, and thanks returned to the donors.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

As already announced, the annual meeting of the Fellows and Members will be held on Thursday, November 18th, at 3 p.m.

THE ANNUAL REPORT.

The annual report of the Council for 1909 has recently been issued. Most of the matters dealt with in it have already been recorded in these columns.

Proposed Combination with the University of London.

In the section of the report which deals with this subject, the report of the delegates of the two colleges published in the BRITISH MEDICAL JOURNAL of March 6th, p. 607, is set out, and it is added that the college has learnt that it will be afforded the opportunity of giving evidence before the Royal Commission on University Education in London at some date in 1910. In the meantime, the Royal Colleges have approached the University of London, and on July 2nd, 1909, the delegates of the Royal Colleges met representatives of the university and placed the proposed scheme for combination before them.

Administration of Anaesthetics.

In reply to the letter received in December, 1908, from the General Medical Council, inquiring how far effect had been given to the recommendation of that Council communicated to the College in June, 1907, to require students to procure evidence of having received practical instruction in the administration of anaesthetics, a letter was sent stating that the desirability of making practical instruction in the administration of anaesthetics a compulsory part of the medical curriculum was recognized by the Council of the College in 1901, and that in December of that year, in conjunction with the Royal College of Physicians, a regulation was adopted requiring a candidate before admission to the final examination to produce a certificate "of having received, at a recognized medical school and hospital, instruction in the administration of anaesthetics to the satisfaction of his teachers," and that, moreover, questions on the subject were from time to time put to candidates by the examiners of the college. The letter went on to express the hope that the General Medical Council would be successful in its endeavour to induce other examining bodies to adopt a regulation which had long been in force at the English Royal Colleges of Physicians and Surgeons. Upon the recommendation of the Board of Examiners in Dental Surgery candidates for the licence in dental surgery of the college are now required to produce evidence that they have received instruction in the administration of anaesthetics, and all candidates for the licence who enter at a recognized dental hospital or school on or after October 1st, 1909, will be required to produce a certificate "of having attended a recognized dental hospital and school a course of practical instruction in the administration of such anaesthetics as are in common use in dental surgery."

The Central Midwives Board.

The report made by Mr. J. Ward Cousins, the then representative of the Council of the College upon the Central Midwives Board, sets out the facts which make it evident that the Midwives Act, 1902, could never effectually work without considerable alteration. The experience of the past, he stated, clearly indicated the necessity for amendments in the followihg directions: (1) The county councils and county borough councils should be granted power for defraying all expenses incurred by the local supervising authorities in the discharge of their duties; (2) the payment of medical men summoned by certified midwives should be regulated by a definite scale suitable to the local circumstances and the services rendered; (3) some provision ought to be introduced for securing better co-operation between the local supervising authorities and the Central Midwives Board.

From a tabular statement embodied in the report, it appears that of the 92 cases reported to the Central Midwives Board during 1908 by local supervising authorities throughout the country, 44 were charges of neglect to send for medical aid. In 24 of these 44 cases the midwife was struck off the roll, in 13 she was censured, in 6 cautioned, and in 1 no action was taken.

Examination Hall.

The report states that the site for the new examination hall acquired in Queen Square, Bloomsbury, has cost £23,200, and that it will also be necessary to purchase the furniture to the several houses, the net cost of which is not likely to exceed £1,000.

Finance.

The gross income of the college amounted to £25,401, an increase of £427 on the gross income of the previous year. The expenditure amounted to £23,076, an increase of £1,895 on the expenditure of the previous year. The most noticeable item in which increase occurred was under special expenses for the museum, where there was a difference of £1,000, largely attributable to an expenditure of £663 on furniture and fittings. The special expenses of the library showed little variation, and, as in the previous year, amounted to over £1,600. The original cost to the college of the Examination Hall buildings amounted to £30,251, but the share of the sinking fund transferred to the college was £1,736. The net sum realized by the college from the sale of the Examination Hall buildings and lease was £24,512; the loss on the original cost thus amounted to £4,000, but the price received was considered satisfactory, having regard to the depreciation of the buildings during some twenty-two years.

Issue of Diplomas.

The number of diplomas issued was as follows: Membership, 356; Fellowship, 66; Licence in Dental Surgery, 81; Diploma in Public Health granted jointly with the Royal College of Physicians, 30.

Museum.

Alterations are being effected in the system of cataloguing and labelling the contents of the Museum. Each specimen is to be furnished with its own explanatory card, to be found with others contained in specially designed boxes attached to each case or adjacent pair of cases, throughout the Museum so that visitors may find at hand a full history and explanation of the specimens. Already thirty boxes are in use. Four cabinets have been designed by Mr. E. C. Frere, A.R.I.B.A., to contain the hall catalogue; a double series of cards which will serve the same purposes for the Museum as the "index" and "list of contents" do for a book. It is estimated that the "index series" will involve the preparation of 250,000 cards—an enormous labour—but one which will greatly increase the utility of the Museum. Owing to the rapid growth of certain sections of the Museum it was found necessary to introduce a system of numbering the specimens which will admit of unlimited additions at a point in the collection without disturbing pre-existing numbers. The method adopted is a modification of the decimal system.

Alterations have been effected during the past year in the organization and equipment of the museum. The anatomical plates prepared in Padua in 1646 under the direction of John Evelyn, F.R.S., the diarist, the oldest anatomical studies in this country, with the exception of the "Harvey plates" in the Royal College of Physicians, have been removed from one of the staircases and placed with the modern anatomical preparations. Two important additions have been made to the equipment of the articulator's department, a dental engine and a mechanically driven saw for the accurate preparation of large sections.

A small collection of about forty stuffed animals, purchased over a hundred years ago at the sale of the Ashton Lever collection, being of historical rather than scientific interest, were offered to and accepted by the authorities of the British Museum. Hunter's pea-hen showing male plumage has been retained for the museum.

Mr. J. Herbert Parsons, F.R.C.S., has been appointed by the Council to revise, extend, and recatalogue the collection illustrating injuries and diseases of the eye, and Dr. R. T. Leiper, of the Tropical School of Medicine, has undertaken a similar revision of the collection of entozoa.

The collection of specimens shown at the Franco-British Exhibition was safely returned and the Diploma of the Grand Prize was awarded to it. Mr. Shattock's series, sent to the International Tuberculosis Congress held at Washington in 1908, formed an important part of the British section of specimens exhibited there, to which a gold medal was awarded. Specimens presented to the museum by Darwin have been sent on loan to the British Museum Natural History Collection, to be placed on exhibition there in connexion with the Darwin centenary celebration. Specimens have also been sent to the exhibition given in Whitechapel under the auspices of the National Association for the Prevention of Consumption.

The Nubian Pathological Collection presented last year has been arranged and catalogued by Mr. Shattock, and the Council of the College has accepted as a trust the collection of the Odontological Section of the Royal Society of Medicine, one of the most valuable odontological collections in the world.

Six demonstrations explanatory of the contents of the museum were given during the past year by the Conservator and six by the Pathological Curator. These demonstrations were well attended.

Their Royal Highnesses the Prince and Princess of Wales, accompanied by Sir Frederick Treves, Bart., visited the museum, and were received by the President of the College. Two large parties of French physicians, introduced by Dr. Leonard Williams, were received, and twenty-eight Saturday afternoon student parties paid visits in the course of the year.

CONJOINT BOARD IN ENGLAND.

The following candidates have been approved at the examination indicated:

Second College.—E. S. Abraham, H. A. Ash, R. Brewitt-Taylor, N. Cheune, E. R. C. Cooke, B.A.Cantab., F. C. Cowtan, W. T. Dobson, A. R. Esler, M. Ffoulkes, A. A. H. Fyzee, H. Gibson, N. Grellier, C. C. Harrison, B.A.Cantab., W. G. Helsby, G. A. Hodgson, G. A. Hooton, G. J. P. Huddleston, F. M. Hughes, F. M. S. Hulke, A. R. Jennings, B.A.Cantab., J. E. T. Jones, G. W. King, E. T. H. Lea, C. C. Ling, E. M. Mahon, C. H. G. Penny, J. L. Perceval, M. Pern, O. Pitt, M. Radford, H. Robinson, A. B. Rosher, H. Sharpe, B.A.Cantab., E. W. Twining, C. B. Vakil, A. Viney, T. M. O. Williams, B.A.Cantab., and H. S. Young.

Medico-Legal.

VERONAL POISONING.

At an inquest in Marylebone on November 1st the jury returned a verdict of death by misadventure in a case of supposed veronal poisoning. The deceased was a barrister who suffered occasionally from sleeplessness. Just before bedtime on the night before his death a medical friend who shared house with him suggested his substituting for the veronal a bottle of stout. Between 8 and 9 the following morning the patient came to the medical man's room in what seemed to be a state of fright. He said that he had had a seizure in the night, and that he had no control over his limbs. He was taken back to bed, and after some breakfast seemed better. Two hours later he became unconscious and died about 9 p.m. Meantime another medical man had been called in, and was informed by the patient that he had taken 15 grains of veronal about 3 a.m. Both medical witnesses regarded veronal poisoning as the cause of death.

VALUE OF A SHARE.

M.—According to our correspondent's figures, the practice has diminished in value one-third while he has been a partner; if, therefore, he were to retire from it now, he could not fairly expect to receive for his share more than two-thirds of the price he originally paid for it.

Curious.—Strictly speaking, the letters "Brux." should be placed after an unregistered Brussels M.D., but it could not be said to be illegal for a registered medical practitioner to omit this affix when simply using the M.D. as an ordinary academic distinction.

Medico-Ethical.

THE OBLIGATIONS OF A SUBSTITUTE.

T. W. M.—It not uncommonly happens that a practitioner who has acted as substitute for another in a case of acute illness is asked to see the case to the end, and as the patient in this case made a great point of it, we think our correspondent was justified in agreeing; as he considered himself throughout as acting as the substitute for A., but for whose absence he would not have been called into the case, the fees for the whole attendance should be divided between them.

GRATIS ATTENDANCE ON NURSES.

Devon Rural.—Not to make any charge for professional services to a nurse is purely an act of grace. Our correspondent is fully entitled to make a charge if he thinks the circumstances justify it.

Public Health
AND
POOR LAW MEDICAL SERVICES.

DISINFECTION OF CLOTHING.

A. E.—The powers which local authorities possess to enforce the disinfection of infected clothing are contained in Section 120 of the Public Health Act, 1875, and in Sections 5 and 6 of the Infectious Disease (Prevention) Act, 1890. Section 120 of the latter Act, which is adoptive, enables the authority to require the owner of articles certified by a medical officer of health or registered medical practitioner as infectious to be disinfected, and in default the authority may carry out the disinfection at the owner's cost. Sections 5 and 6 give the same power with slightly varied procedure. If action is taken under Section 6 the cost of disinfection must be borne by the authority, which must compensate the owner for any unnecessary damage occurring during the process of disinfection.

NOTIFICATIONS.

R. J. H.—There is no obligation upon a medical practitioner to notify a case of infectious disease to any one but the medical officer of health of the district in which the case occurs.

Obituary.

We regret to record the death of Dr. Hugh Arthur, of Airdrie, Lanarkshire, in the sixty-fifth year of his age. It occurred suddenly on October 5th, from cerebral haemorrhage, almost immediately after his return very late in the evening from a long day's work. Dr. Arthur, a native of Old Cumnock, Ayrshire, and a Glasgow student, graduated M.B., C.M.Glasg., in 1869, proceeding to M.D. some three years later. Among his teachers, as he used to record with pride, were Professors Gairdner and Muirhead, and Lord Lister. In Airdrie he settled down some forty years ago, and in the course of time acquired a large practice, and received a large number of public appointments. At the time of his death he held the health officership of the burgh, and was surgeon to the police, public vaccinator, parochial medical officer, physician to the Airdrie Fever Hospital, and certifying factory surgeon. In the course of his long professional life Dr. Arthur had formed and was ready to support very definite notions on several points. He regarded the old apprenticeship system with high esteem, and thought that it was to its abolition that many latter-day difficulties were in some degree due. The difficulty, for instance, of exercising proper control over contract practice and obtaining adequate remuneration would, he thought, be much less if young men on commencing independent practice possessed the same kind of knowledge and ethical training as that which was instilled into pupil apprentices in past times. He also regarded surgical interference in cases of appendicitis as rarely necessary, and in proof thereof used to state that he had never had occasion to call in a surgeon, nor had ever had a fatal result, treatment by calomel and opium having brought about a favourable outcome in all the cases which had passed through his hands. Among drugs he attached great value to ammonium carbonate, which he regarded as almost specific in the treatment of scarlet fever. He was a member of the Lanarkshire Division of the British Medical Association, a Fellow of the Royal Institute of Public Health, and a regular attendant at the annual public health congresses in Scotland, frequently taking part in discussions. He was also for a good many years an active volunteer, and held rank as surgeon-major in the 5th Volunteer Battalion of the Scottish Rifles. Personally Dr. Arthur was a man not alone of genial manners, but of most unselfish spirit, beloved by his friends and esteemed by the whole countryside. He was married, and is survived by his wife and five daughters.

At a meeting of the Royal Sanitary Institute to be held in the Council Chamber, Exchange Buildings, Nottingham, on Saturday, November 20th, at 10.30 a.m., a discussion on the improvement of city slums by housing reforms and otherwise will be opened by Alderman T. J. Dabell, J.P., M.R.C.S., chairman of the Health Committee, Nottingham.

Letters, Notes, and Answers.

BRITISH MEDICAL ASSOCIATION AND BRITISH MEDICAL JOURNAL.

The offices of the British Medical Association and of the British Medical Journal are at 429, Strand, London.

Communications respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the Journal, etc., should be addressed to the Office, 429, Strand, London, W.C.

Telegraphic Address.—The telegraphic address of the EDITOR of the British Medical Journal is *Aitiology, London*. The telegraphic address of the British Medical Journal is *Articulate, London*.

Telephone (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* British Medical Journal *alone unless the contrary be stated.*

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

Correspondents not answered are requested to look at the Notices Correspondents of the following week.

Manuscripts forwarded to the Office of this Journal cannot under any Circumstances be Returned.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Gout.

N. L. asks for advice in the following case: A gentleman, aged 35, came under my treatment towards the end of last May suffering from gout in the hands of a few weeks' duration, also from small gouty chalk-stones loosely attached to the anterior and posterior pillars of both fauces. His health was otherwise fairly good. I prescribed a mixture consisting of lithii carb., piperazine pur., citrate and bicarbonate of potash and tr. colchici seminum. The hands soon became completely cured, and the throat also improved. He was kept on that treatment for nearly two months; when I substituted a mixture containing the iodide and bicarbonate of potassium; and also ordered formamint lozenges and a gargle made up of potassium chlorate and alum sulphate. For a time the condition continued to improve, the chalk-stones to separate and become detached, though on the pillars of the left fauces new ones would frequently form. In the last three weeks, however, there has been a marked tendency for the entire condition to get worse—the throat and hands, but the former much more so. The patient's occupation is of a sedentary nature. I may add his diet had been regulated during the whole course of treatment.

Income Tax.

1. T.—Our correspondent wishes to know whether the Income Tax authorities are right in requiring him to pay tax from April 5th to July 1st, 1909, at which date he sold his practice on such terms that his successor took all bookings from the end of March. Also whether his travelling expenses would be paid in the event of a successful appeal.

*** There is no doubt as to the legal position. Income tax on the profits of a profession is payable by the person who exercises the profession. In the event of a change during the year, the charge is required to be apportioned between the persons concerned, having regard only to the periods during which each has exercised the profession. In no circumstances have the officials power to collect the full year's tax under Schedule D from the successor, and it would probably be useless to appeal to the Commissioners on the point. The assumption in the particular case would be that the profits for the first two months were purchased by the successor, and if he did not, as a matter of fact, pay an enhanced price on this account the only remedy would seem to be by private agreement between the persons concerned. No expenses can be claimed in connexion with income tax appeals.

The Comparative Value of Whole Meal and White Bread.

G. R. W. writes that it is proposed to substitute whole meal for white bread in a Poor Law school to which he is medical officer, and the matter has been referred to him for his opinion. He asks for information as to the relative nutritive value of these articles of diet.

*** According to the tables given in Friedenwald and Ruhräh (third edition, 1909, page 706) the composition of white bread (mean of 198 analyses) is as follows: Water, 35.3; protein, 9.2; fat, 1.3; fuel value per lb., 1,215 heat units. Of whole meal bread (the mean of 12 analyses): Water, 38.4; protein, 9.7; fat, 0.9; fuel value per lb., 1,140 heat units. Hutchison (*Food and the Principles of Dietetics*, 1906, page 212) gives the following figures: 100 grams of white bread contain 269 heat units; 100 grams of entire white bread 235 heat units. These figures show a difference o 8 per cent. to 10 per cent. in favour of white bread, but the nutritive value of whole meal bread is less than the chemical analysis suggests owing to its defective absorption; neither the mineral constituents nor the carbohydrates are absorbed so completely as those of white bread. Hutchison says: "We may fairly regard the vexed question of whole meal *versus* white bread as finally settled, and settled in favour of the latter, and had due regard been paid to the behaviour of bread in the intestine instead of merely its chemical composition the Bread Reform League would probably never have come into existence" (Ibid., p. 216).

LETTERS, NOTES, ETC.

A Disclaimer.

Dr. W. C. Rivers (Barrasford Sanatorium, Northumberland) writes that his attention having been called to the fact that his name is being used in connexion with a paper read at the recent annual meeting of the British Medical Association at Belfast, in an advertisement of a certain form of treatment appearing in the daily press, he is taking steps to prevent further such use of his name.

The First Observation of Glossina Palpalis in North-Eastern Rhodesia.

Dr. Sheffield Neave, M.R.C.P. (Ingatestone) writes: I have come across a passage in the report by Dr. Allan Kinghorn on the incidence of human trypanosomiasis in North-Eastern Rhodesia to the Liverpool School of Tropical Medicine, in the *Annals of Tropical Medicine*, vol. ii, No. 2, June 9th, 1908, which may prove of importance at some future time, and which should be corrected as being an error in a matter of fact. It is stated on page 79 that *G. palpalis*, in reference to North-Eastern Rhodesia, "was first found in 1906 by Dr. Noble at Kasenga and the Nafunta Falls on the Congo side of the Luapula." Knowing that Dr. Arthur Pearson was generally believed to have been first in this matter, I wrote to him on the subject, and he writes as follows to me: "I first found *palpalis* on the Luapula, 4 miles down stream from Madona and just above the Nafunta Falls (or, rather, rapids) in the first week of January, 1906." This was confirmed in July, I believe, by Dr. Noble, and I have always imagined that it was on account of the communication by Dr. Pearson of this fact that Dr. Noble was sent to examine the river. I may, however, be mistaken on this point. Two of the flies sent by Dr. Pearson in January to the British Museum were examined by Mr. Austen, and the diagnosis confirmed by him.

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